DOCUMENT RESUME

ED 449 388 CG 029 765

AUTHOR McCutcheon, Lynn E., Ed.
TITLE North American Journal of Psychology, 1999.
PUB DATE 1999-00-00
NOTE 346p.; Published semi-annually.
AVAILABLE FROM NAJP, 240 Harbor Dr., Winter Garden, FL 34787 ($35 per annual subscription). Tel: 407-877-8364.
PUB TYPE Collected Works - Serials (022)
JOURNAL CIT North American Journal of Psychology; v1 n1-2 1999
EDRS PRICE MF01/PC14 Plus Postage.
DESCRIPTORS *Psychology; *Research Tools; *Scholarly Journals; *Social Science Research

ABSTRACT

"North American Journal of Psychology" publishes scientific papers of general interest to psychologists and other social scientists. Articles included in volume 1 issue 1 (June 1999) are: "Generalist Looks at His Career in Teaching: Interview with Dr. Phil Zimbardo"; "Affective Information in Videos"; "Infant Communication"; "Defining Projective Techniques"; "Date Selection Choices in College Students"; "Study of the Personality of Violent Children"; "Behavioral and Institutional Theories of Human Resource Practices"; "Self-Estimates of Intelligence"; "When the Going Gets Tough, the Tough Get Going"; "Behaviorism and Cognitivism in Learning Theory"; "On the Distinction between Behavioral Contagion, Conversion Conformity, and Compliance Conformity"; "Promoting Altruism in Troubled Youth"; "The Influence of Insecurity on Exchange and Communal Intimates"; "Height as Power in Women"; "Moderator Effects of Managerial Activity Inhibition on the Relation between Power versus Affiliation Motive Dominance and Economic Efficiency"; and "Downsizing Experience and Gender." Articles in volume 1 issue 2 (December 1999) include: "To Thine Own Self be Untrue"; "Training in Psychology and Belief in Recovered Memory Scenarios"; "Effects of Student Academic Presentation on Perceptions of Gender and Sociability"; "Gender Differences in Psychological Distress, Coping, Social Support and Related Variables Following the 1995 Dinal (Turkey) Earthquake"; "Self-Esteem and Sex Attitudes as Predictors of Sexual Abstinence by Inner-City Early Adolescents"; "Comparison of a Physical and Mental Disability in Employee Selection"; "Real and Perceived Impact of the Abbreviated 1998-99 NBA Season on the Final Standings"; "Sub-Goals and Temporal Orientation"; "Evaluation of an Abstinence-Based Curriculum for Early Adolescents"; "Structure of Multicultural Attitudes toward Disabilities"; "Measuring Cue Perception"; "Shyness and Group Brainstorming"; "Interview with the Authors of the Universal Nonverbal Intelligence Test"; "Religious Orientation and Religious Experience"; "Levels of Elaboration, Interference and Memory for Vocabulary Definitions"; "Gender and Humor"; "Preliminary Normative Data on the Depression-Happiness Scale for a Mildly Depressed Group"; and "Impact of Voice on Source Credibility in Advertising." (GCP)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 449 388

North American Journal of Psychology, 1999

Lynn E. McCutcheon, Editor

Volume 1 Number 1 June 1999
Volume 1 Number 2 December 1999

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

- ☐ This document has been reproduced as received from the person or organization originating it.
- ☐ Minor changes have been made to improve reproduction quality

- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

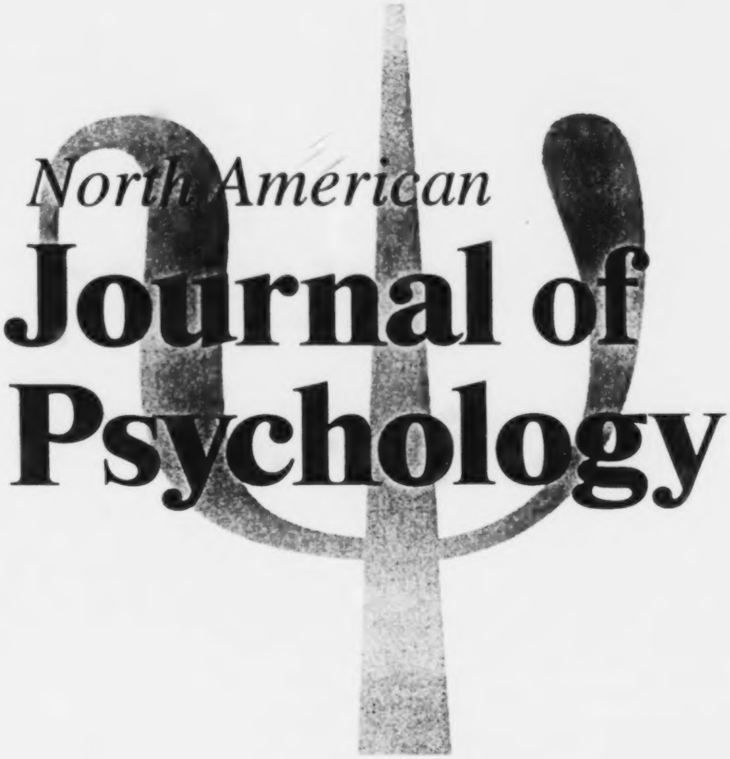
L. McCutcheon

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

1

CG 029 765

BEST COPY AVAILABLE



North American

Journal of Psychology

CG029765

Vol. 1, No. 1 1999

Advisory Editorial Board

ADRIAN FURNHAM
Psychology
University College London

MANUEL LONDON
Psychology
SUNY, Stony Brook

RITTA HECKHAUSEN
Max Planck Institute for Human
Development and Education

KAREN LYNESS
Management
Baruch College, CUNY

DOUGLAS JACKSON
Psychology
University of Western Ontario

ROBERT PASNAK
Psychology
George Mason University

HEIDI KELLER
Psychology
University of Ostabruck

RICK RYAN
Psychology
University of Rochester

PHILIP ZIMBARDO
Psychology
Stanford University

Editor

LYNN E. McCUTCHEON

How to Subscribe to The *North American* Journal of Psychology

All subscriptions are on a calendar year basis only. If you order late in the year, the earlier issues will be sent to you. Institutional rate: $65. Individual rate: $35. Add $7 for Canadian subscriptions. Add $8 for subscriptions outside North America. *North American Journal of Psychology* is published semi-annually in June and December.

North American Journal of Psychology

June 1999 Vol. 1, No. 1

Editor's Comments iii

A Generalist Looks at His Career in Teaching: An Interview with Dr. Phil Zimbardo 1

Affective Information in Videos: Effects on Cognitive Performance and Gender 17
Terry A. Anderson & Marc E. Pratarelli

Infant Communication 29
Brian Vandenberg

Defining Projective Techniques: The Irrelevancy of "Projection" 35
Edwin E. Wagner

Date Selection Choices in College Students: Making a Potential Love Connection 41
Christina M. Frederick & Craig S. Morrison

A Study of the Personality of Violent Children 51
Elliott H. Schreiber

Behavioral and Institutional Theories of Human Resource Practices: An Integrated Perspective 57
A. Amin Mohamed & David Terpstra

Self-Estimates of Intelligence: A Cross-Cultural Study from Three Continents 69
Adrian Furnham & Peter Baguma

When the Going Gets Tough, the Tough Get Going: Effects of Item Difficulty on Multiple-Choice Test Performance 79
Nicholas F. Skinner

Behaviorism and Cognitivism in Learning Theory: Whatever Happened to Neobehaviorism? 83
R. Thomas Dudley

On the Distinction Between Behavioral Contagion, Conversion Conformity, and Compliance Conformity 87
Paul R. Nail & Whitney B. Helton

Promoting Altruism in Troubled Youth: Considerations and Suggestions 95
Joseph R. Canale & Sonja R. Beckley

The Influence of Insecurity on Exchange and Communal Intimates 103
Ann Zak, Tracy Fancher, Mary Gillies, Elanora Tornatore & Erin Waterhouse

Height as Power in Women 109
Aaron R. Boyson, Burt Pryor & Jeff Butler

Moderator Effects of Managerial Activity Inhibition on the Relation Between Power versus Affiliation Motive Dominance and Economic Efficiency 115
Hallgeir Halvari, Geir Atle Lima & Oivind Aastorp

The Downsizing Experience and Gender: Similarities and Differences 135
Theresa Kline & Sheldon Goldenberg

Editor's Comments

A year has gone by since the decision was made to commit considerable time and resources to this new journal. The *North American Journal of Psychology* was born out of 25 years of my frustration in dealing with editors, reviewers, and a process that somewhat arbitrarily rewards only a small minority of those who submit good papers.

I think *NAJP* can do better than most of the conventional psychology journals by reducing author frustration, speeding up the review process, accepting good papers rather than rejecting them, and publishing papers in a more timely fashion. I make such bold assertions because I have been fortunate enough to obtain the assistance of Rick Crandall as a consultant. Rick shares my vision of what a good psychology journal should be, and he has transformed that vision into reality as the editor of the *Journal of Social Behavior and Personality*.

I thank Rick for his help in getting *NAJP* off the launching pad. I also thank the world-class group of scholars who consented to be on the editorial board. I thank the reviewers, all of whom did a marvelous job of critiquing papers promptly and with great insight. Hats off to Tim Massey, who has helped me immensely in my effort to use computer-age technology to speed up the editorial process. Finally, I thank the authors for having the faith and the courage to send their manuscripts to an unknown, untested journal.

The past year has been quite a learning experience for me. I tried to perform the duties of an editor to the best of my ability. I hope I have responded quickly, courteously, and capably to the many phone calls, letters, e-mail messages, manuscripts, and faxes that came my way. I expect that *NAJP* will become more responsive and more efficient in the future.

Lynn E. McCutcheon, editor

A Generalist Looks at His Career in Teaching: An Interview with Dr. Phil Zimbardo

Philip G. Zimbardo
Stanford University

NAJP: Could you give an overview of how you got interested in psychology?

PZ: I think I was nurtured into psychology by my early life experiences. I grew up in the South Bronx ghetto. My parents didn't go past the eighth grade and nobody in my extended family ever finished high school, if that far, so education was not a value, or rather it was a luxury we could not afford. Life was about surviving, not reflecting.

For poor kids living in the ghetto, several things happen. First, if you're poor, the only important factor you have is people. You don't have material things. You don't have commercial games. You don't have paid entertainment, and back then you didn't have TV or electronic video games, or home entertainment centers. The main thing you had was people and dealing with other people in the streets—that was our entertainment center.

In those days, the world of children excluded adults. You didn't have parents supervising kid's play. Essentially parents told you to get out of the apartment, because they were small and cramped and they wanted quiet time without a bunch of noisy kids around. So you lived and played in the street in front of your tenement. What that meant was you had to learn very quickly to be a personality diagnostician. Who are the people you can trust? Who are the big guys you should ingratiate yourself with? When should you be compliant and conforming? When should you try to be unique, independent and stand out from the gang? What people call "street smarts" is really a blend of this kind of intuitive personality analysis mixed with primitive situational analyses. I was a skinny, sickly kid growing up with really tough kids on East 151st Street. To survive, it was incumbent upon me to learn those skills very quickly and make them operationally effective. And ultimately I did learn those lessons so well that I went from being a lowly follower, tag-a-long, to the

---

Author's info: Correspondence concerning this article should be sent to Phil Zimbardo, Ph.D., Dept. of Psychology, Stanford University, Stanford, CA, 94305.

North American Journal of Psychology, 1999, Vol. 1, No. 1, 1-16.
©1999 NAJP Winter Garden, Florida

ring leader, head of the gang, president of the class, captain of the team. That was one set of experiences that got me focused on people, on observing people, trying to understand people, trying to manage impressions and form them of others, and ultimately working to persuade, influence, and manipulate others.

A related phenomenon pushed me toward becoming a social psychologist. Poor people are all situationalists. Rich people are dispositionalists. When you're poor, you look around and all you see is failure. The question is, to what are you going to attribute the failure?

The failure of your father to have a good job or any job? The failure of your mother to be dressed well or be well educated? The natural thing is to say, maybe it all depends on the situation—I bet things would have been very different if we had more resources, more privileges, more breaks, better luck. Whereas if you're rich, you look around and see success, and want to take credit for the success—it's in people, it's in their genes, their family line, their IQ, their personality traits.

I think these notions fuel these two very different approaches to understanding the causes of behavior we observe. Social psychologists say the social context controls more of what we think, feel, and do than most people realize. The dispositionalists say no, we really have to understand personality traits, like the morality, character, intelligence, the organismic variables that are person-centered. In psychology, the dispositional has really been the mainstream approach in our individualistically focused culture. It has been the unquestioned assumption as the causal core of human nature in all of our institutions, like law, religion, medicine, business. Those two forces coming out of my childhood, pushed me in the direction of psychology. The one restraining force against becoming a child psychologist is that I took introductory psychology my freshman year at Brooklyn College and hated it! I got the only C grade in my life. It was a bad book, a bad teacher, no coherence to the lectures or the text (Munn), and nothing of relevance to real people that I had been observing and being. A class of 300 taking multiple-choice tests where you could not explain what you know, turned me off my early love. I didn't take another psych. course until my senior year. It was an experimental psychology course, and I realized how much I liked to do research and answer causal questions with precision of experimental methods and analysis. I had been majoring in sociology/anthropology, where they asked the big, interesting questions but never had a satisfying answer, and they were dealing with institutions, when I wanted the people level of analysis.

NAJP: How do you look at yourself now? You're in a position to look back, essentially to have been a participant in much of the history of modern psychology. How has psychology changed in the last 45 years?

PZ: Although I'm a social psychologist at heart, around that heart I think is a well-crafted generalist. During my training at Yale, I worked very hard to become a *psychologist*, to take courses across the board in learning, in personality, in sensation, in abnormal psychology, as well as in social psychology, and did research with a range of faculty from different disciplines—Neal Miller, Frank Beach, Seymour Sarason, Carl Hovland, Bob Cohen, Jack Brehm, Irving Sarnoff, among others. In a sense, being labeled a generalist can be almost disparaging, meaning that you don't know enough or aren't good enough to be an expert in a particular area that identifies you.

But for me, it's a compliment. My focus has always been on the broadest possible perspectives of psychology. As an undergraduate, majoring in sociology and anthropology gave me that broader context in which to put my interests in social psychology. And my Yale training as an experimental behaviorist enabled me to feel comfortable using paradigms from classical or operant conditioning, from classic motivational research, or to use consummatory behaviors and psychophysiological reactions in my social psychology investigations of dissonance theory or studies of unexplained arousal, for example.

From the beginning, I also loved to teach as much as I love research. I want to show how, in my career, teaching and research have always been two sides of the same coin, two ventricles of the same heart. I've always loved to teach introductory psychology from my first course as a graduate student in 1957 to my 40th year of teaching it last term. You can't teach introductory psychology well without being a generalist, interested, or rather fascinated by most areas of psychology so that you can bring out the excitement of them to your students. Nor can you write a good psychology text without loving every different domain of psychology beyond your narrow field of specialization.

What is remarkable to me in looking back on my career is the many influential leaders of psychology that I knew personally, studied with, worked with, talked with informally. It was indeed a golden age because most of the second generation of psychologists was still alive and kicking. In addition to those I mentioned earlier, I have known the following psychological colleagues: Hal Proshansky, Irving Janis, Mark May, Don Campbell, Muzifer Sherif, Leon Festinger, Stanley Schachter, Hank Reicken, Stanley Milgram, Solomon Asch, Hal Kelley, John Darley, Bibb Latane, Morton Deutsch, Hal Gerard, Bill McGuire, Elliot Aronson, to name a few and not counting my great colleagues at Stanford. The field was smaller then, younger then; It was a time of Main Effects undiluted by higher order interactions that we can never remember, of behavioral experiments with real people observed in interesting contrived situations, not respondents telling us how they imagine they might behave in hypothetical situations on questionnaires.

It was the simple era then before the Information Dam broke loose and we became inundated with data, with endless new journals churning out more articles and edited volumes churning out more chapters than anyone could possibly read in a lifetime. So we knew less than students know now, but I would like to believe we knew less in a better way.

On the other hand, so many new fields have been opened to us and new ways of thinking and knowing, that there is more excitement now about the broad range of psychological inquiry and at the same time the greater depth of the analyses we can make using new technologies. For example, when I was a student, one of the most boring areas of research was that of memory, modeled by Ben Underwood's relentless pursuit of every conceivable independent variable related to nonsense syllable memory paradigms. Now there are few areas more interesting than the study of memory, with its many different memory systems, memory processes, measurement techniques, creative experimental tasks, range of populations studied, and levels of analysis.

NAJP: You've been teaching introductory psychology for 40 years and writing an intro textbook for 30. How do you keep up to write a new chapter on learning, or moral development, or whatever?

PZ: I can't imagine a more challenging, difficult job than to teach an introductory psychology class or write an introductory psychology text at this time. Psychology now spans the universe! It's hard to think of what is *not* psychology. It goes from cell to culture. In my text, *Psychology and Life* (in its 15th edition, now with Richard Gerrig as co-author) there are sections on what is happening inside an ion channel inside of a single neuron. On the other end, in a new social psychology applications chapter we're talking about genocide, ethnic cleansing and peace psychology—and everything in between. There's no other field in all of academia that has that breadth and depth at the same time.

But that makes it very hard to keep up with the information explosion in our field. I think that is one reason there are fewer and fewer generalists and more people specializing. Many of these specialists soon become microspecialists, some not even interested in being a social psychologist, but interested only in a small part of the field and intentionally ignorant of the rest of the field, or earlier work. Then there are new fields that are emerging that were not around when I was a kid. Health psychology, cultural psychology, behavioral gerontology, biology of memory, are new to this time. Cognitive neuroscience, with its functional neuro imaging, is a totally new field that did not exist two editions ago. It is great that cognitive psychologists gave us back our minds that my Behaviorist brethren had set aside, and further that these Cognitive Neuroscientists are giving mind a place in the brain. And that Social psychologists are revealing that what matters in understanding behavior is context as well as content, situations as well as inner determinants, and cultural diversity as well as pure bred subjects. The way a textbook author has to handle this explosion of knowledge is to read all the time, as much as you can, as broadly as you can. Nothing of human nature can be alien to a psychology textbook author. The moment the text is published, you're already starting a file for the next edition, where you're clipping, cutting and pasting the articles you read and things from the media as possible items for this or that chapter.

Also, before starting a new edition, I talk with a lot of colleagues whose expertise and opinions I respect. We talk about what's new and valuable, what findings are no longer important in a field, and what are the new things that they are excited about. In a sense they give me more than just new information, they give me the sense of passion they have for their discipline, and then as an author I try to imitate it to my readers. The big challenge for a text author is between presenting the classics, the oldies but goodies, updating them with new research that qualifies their implications, and also working in contemporary research in entirely new areas. What to omit is as hard a decision as is what to include, maybe tougher, and especially as the information mass grows, so does the size of our texts. They would become unwieldy without judicious editing, that often feels like slashing and cutting when done by your editor's vicious "delete" key.

It is enormously time and energy consuming, an overwhelming task, to generate a 700-page book with 18 chapters, with thousands of references (our current edition has 36 pages of references in small font). Not to mention additional work on brief editions, instructor's manuals, student study guides, and other ancillaries. When I look back, I can't imagine now how I ever did it edition after edition, and still found time to have a life as a researcher and a person. However, as you get older, you have to selectively optimize your time and energy, according to my colleague, Laura Carstensen, an expert on aging. That's the time the old generation calls on the new generation to begin to share the load. In my case, Richard Gerrig, a cognitive psychologist and master teacher of introductory psychology, comes to my assistance. First he adds a lot of sophistication in many areas in which I am no longer particularly strong, with the goal of ultimately replacing me, just as I replaced Floyd Ruch back in 1968. Then, if things go right and our book continues to be adopted, in 20 years or so, old Dr. Gerrig will be replaced by one of today's students of psychology, as long as she is a sound generalist.

NAJP: What advice would you give a generalist—somebody who felt it was worthwhile to teach introductory psychology and not be a narrow specialist?

PZ: Let me reframe that question. Would I advise a young person who wants to teach at a top school to be a generalist rather than a specialist? The answer is no. Departments don't hire generalists. Every psychology department wants the outstanding person in a very narrow area, the specialist super star. But that's how you get your foot in their door. I think what you have to do is then be willing to wear those two hats. Your career is going to be advanced by being the world's leading expert on the psychology of widgets.

Yet, what will turn you on most day after day is the high you will get from being able to teach introductory psychology in all its richness and glory. That is where you can make a big contribution by being able to have access to those young, inquiring minds who are not necessarily going to become psychologists, but are going to rule the world some day. You have an opportunity to shape the way they think about psychology, to focus and broaden their vision. By being a generalist in that arena you can more fully enjoy the diversity of modern psychology and transmit that enthusiasm and passion to your students. There's nothing like it. Research is exciting when you get a new idea, get significant predicted effects, and have your published article in hand, a process that now takes years with little fun in between those few highs. Good teaching gives you those highs steadily on a fixed interval schedule. Given that there are so few people who are able, willing, and competent to teach introductory psychology, if you can do that well, that will help you to get good jobs and be a feather in your tenure cap, assuming that you continue to work your butt off on the side churning out research that your colleagues respect.

NAJP: What about people at junior colleges or teaching-oriented four-year colleges where they don't do research, but like to keep active intellectually?

PZ: If you're not doing research, that should mean you have more time to devote to your students, to advising and counseling, as well as spending more time preparing classes. However, in many instances these teachers are forced to carry a heavy workload without the help of teaching assistants, secretaries or other resources that are essential for teaching professionals. But many of them are involved in clinical practices or community work that helps to give them real world experiences, which hopefully they can incorporate into their teaching. Where resources are slim, creativity must take over to save the day and the class. However, the key in all of this is whether you really love to teach or are doing it to pay the bills, just a job. If you love it you will find a way to make it work for you and your students; if you don't all the resources in the world won't make a difference. Teaching is a perfectible skill, not an inborn trait, and it takes learning, practice and feedback from students and colleagues to perfect. And it takes years of doing it to learn how to do it really well. As I said before, when teaching is going well, it gives you day-to-day reinforcement that you never get in the same way from research. One virtue of not doing much research is not having to face the humiliation of dealing with journal editors, who do have an inborn talent for making anyone feel incompetent. When I give teaching workshops to community college or junior college teachers they report that it is not possible to do as good a job as they want to because of their heavy teaching load. I am sympathetic to that position because when I started my first full time job at NYU in the Bronx in 1960, I taught 13 semester courses each year, 5 each term, 2 each summer (and the 13th was off campus), to make extra money.

Most of them were large lectures, including introductory psychology three times a year. Of course it was tough to carry such a load, especially since I knew that I wanted to do research because I loved to do it and had to do it to get promoted, or to escape to a better school. So you make a lot of sacrifices, give up vacations, entertainment and entertaining, and live your life around your students, teaching and research. That is not a life that many academics want to live, but for me at that time it was better than working on an assembly line or doing the menial jobs that members of my family did.

Of course now I teach many fewer courses, but put more time into the preparation and execution of any one of them with the new goal of making each one memorable for my students and me, like a Michelin 3-star meal. I just finished teaching the best course I have ever taught in my life after 40 years at the podium. My Introductory Psychology course last term at Stanford was a magical class in every way. I had tears in my eyes when it ended because I didn't want it to end, I wanted to keep it going on forever. It was just a wonderful experience; it's doing something totally different within the same context, same teaching structure, like Haiku. I prepared new lectures and demonstrations, had exciting guest lecturers, used new ways of testing, encouraged students to do actual experiments for their term papers, and more. I started a Web site which included detailed class notes, so students could pay better attention to the lecture knowing they could download the details later, and a bulletin board that enabled them to post generic questions that I answered each day or had expert colleagues reply to.

The last point is that if you're in a place where teaching is relatively more important than research, then being a generalist really means understanding the relationship between psychology and philosophy, and psychology and literature, and psychology and art. And that makes one a generalist of an even broader scope than I mentioned earlier, a generalist across domains of psychological knowledge. To be an intellectual generalist, you have to read novels, poetry, go to plays, keep up on current events—so that you can work them all into your

lectures and class exercises. For example, my research on deindividuation, the effects of anonymity on increasing antisocial behavior, came from reading Golding's *Lord of the Flies* for a course on group dynamics, and experimentally testing the novelist's assumption that changing one's appearance can disinhibit aggressive behavior.
In Oxford University, at High Table, you are not permitted to talk about your subject area. The assumption is that you should be sufficiently well-educated and learned that you can carry on conversations outside your narrow domain of specialization. For most people I know that would be an impossible constraint on their speech.

NAJP: Since our journal is taking a generalist approach, which you've called "unpopular," maybe you could make a few other comments on the wedding of teaching and research for you.

PZ: I believe that the introductory psychology course is the most important course we teach in any psychology department for two reasons. First, it attracts those students who will major in psychology and go on to become professionals, and ideally your course started them on a path where one day they will replace you, be better than you, and move the field ahead in new directions. Secondly, many students take this course who do not major in psychology or take any other of our courses, but who will go on to influential positions in the world. They need to appreciate the value of the scientific method, the value of informed, open-minded skepticism, how to answer questions with data, not with authority or dogma, and how to apply the many valuable lessons of psychology to improve the human condition. Psychology teaches the need for tolerance and acceptance of diversity, of individual differences, of analysis without prejudgments. I want the psychology majors to put more life in out psychology and these other students to put better psychology in our lives.

I see that as a challenge and a burden. I know there are some universities where beginning graduate students teach introductory psychology. That's a sin. It should not be allowed. It's almost immoral. You simply don't know enough at that level. I'm not sure I know enough after 40 years of teaching, after writing many editions of introductory texts. To think that a new graduate student can teach all of introductory psychology is just wrong, given the amount of knowledge required these days about so many areas. It is just an abdication of responsibility of faculty because they're essentially saying we're going to dump it on graduate students because we don't want the burden, or can't teach it well ourselves without doing too much preparation. And then, of course, they justify this action by arguing that the introductory course is not so important anyway. It is a tough course to teach, no doubt about it. We got to a point at Stanford where nobody wanted to teach introductory psychology besides me and a very small band of other faculty because of the work it took to be knowledgeable about so many areas beyond one's own specialty. So in order to attract other faculty to teach the course, we changed the structure and required each course instructor to utilize expert lecturers from within or outside the department in those areas the instructor did not feel especially competent. What this does is (a) reduce the instructor's preparation of those lectures while guaranteeing that students are going to get expertise across five or six domains in psychology, and (b) it introduces the students to the professors who will be teaching the second-level courses in developmental, in cognitive, social, personality, abnormal, and so forth. Of course, the primary professor has to be there all the time to do the integration and synthesizing across the different domains. It's worked really well at Stanford and I encourage other departments to try this procedure.

In my teaching, I always also bring in *outside* guests because my goal in teaching is to break down the boundaries between academia and the real world. I try to bring people from the community into the classroom who have something important to say of psychological relevance. Some are non-traditional college lecturers, such as prostitutes, football coaches, debaters who are pro and anti abortion, former mental patients, ex convicts, concentration camp survivors, cult recruiters and ex cult members, and many others. The goal is to break down the boundaries between purely intellectual academic experts in the classroom and those with street smarts in the world outside.

Now that I think of it, I try to do a similar thing in my research, either in generating ideas for the research or after I do the research, I always search for what are the parallels in the real world. That is, I want my research to be significant not only for other social psychologists, but for the general public, for the ordinary person to read it or hear it and say, "Wow, that's interesting, that makes me understand something in my life."

For me, the notion of giving psychology away to the public has always been a central part of everything I do, whether it's my teaching or research. I was pleased that George Miller, when he was president of APA, gave that as his invocation as something that psychologists should do, and we still don't do enough of it. He actually cited the Milgram experiment and the Stanford prison experiment as instances of research that had public appeal. Incidentally, Stanley Milgram and I were homeroom classmates in our senior year at James Monroe High School, the Bronx, in 1954.

NAJP: In your own life as a psychologist, you've done well with a textbook, you have done well with your career and visibility. Have you thought about business applications of psychology?

PZ: The world of work is, for most people, one of the most important things in their life. Psychologists have to make an important contribution to understanding psychological aspects of work. After saying that I have to confess that my research and my focus has not been in that area. I don't know why, but I was never interested in economics, or making money, perhaps because it had been such a preoccupation with my parents at a survival level. I never had an interest in business, indeed education seemed to be the escape route from real work and the world of business. I did work as a kid, was a shoe shine boy in the Bronx, delivered laundry, worked for years as a concession boy in the St. James Theater on Broadway checking hats and coats, selling programs, candy and drinks. But your question reminds me that for poor folks work was always something to be avoided. Work was always ugly and trivial and demeaning. There was no role model who came home and said, "God, I had a wonderful day at the office!" Instead, the mantra I heard as a kid was "another day over, how many days to go to payday?" My father's side of the family were barbers, my mother's side were shoemakers, and hated doing what they were doing, like service people, or waiting on other people. I hadn't thought about it until now. Yes I probably work as hard or harder and longer than most people I know, but it is a work of love, I do it for me, not for a boss and not for the money.

When I wanted to go to college and later to graduate school, my father tried to dissuade me, and finally concluded that: "You don't want to go to work, so stay in school." I was an incorrigible. He thought of going to school as avoiding work. And it was, to avoid the kind of demeaning work that I had always perceived as an awful necessity of life. Interestingly, my wife, Christina Maslach, a UC Berkeley professor, is an expert on job stress and the pioneering researcher on the psychology of burnout. So by having a family colleague who is contributing to making the workplace a better place, I am absolved of not doing my share in that domain.

NAJP: But you seem to have enjoyed what you've done...

PZ: Yes, very much so. The difference between my father's work and mine is that I have the privilege of working on things that I love. The problem comes from loving too much, too many different things. I love teaching most, but I also love many phases of exciting research, and I love writing articles, chapters, text and trade books, I love applying psychology to real world situations, I love being able to counsel and advise people on issues where I am considered an expert, and I love the little bit of therapy that I have done with shy people. I even like some professional activities, such as being President and Board member of the Western Psychological Association. It is also this range of activities that keeps any one of them from becoming boring by it having to sustain me all the time. So it is this total package that has kept me going all these years and hopefully for many more even better ones ahead.

I think that overall I work harder now that I ever have before. I don't teach more courses than I did when I was a kid teacher at NYU, but I put more time into preparation of each course and of each lecture and demonstration than I did previously. In part it is because I have built a reputation that I feel obliged to measure up to. I mean I'm coming near retirement age, yet I still teach more than most professors of my rank and tenure, four or five courses a year, always a large introductory psychology course of about 300 students, freshman and sophomore seminars (on topics like shyness and time perspective), graduate courses, this past term on collective violence, and teaching practicums, as well as individual studies, honors and thesis student advising. I still read term papers and always give extensive feedback, and am available to students through office hours that I enjoy several times a week, and of course on electronic mail.

What I struggle most with is achieving a balance between work and play, between all my professional activities which are typically my Future-oriented self and my non-professional activities, that I like to group under Present-oriented Hedonism. It is always difficult to find time to be a good psychologist and also a good husband, father, friend, active citizen, and then good to one's self by indulging in "pleasures of the flesh," such as getting massages, going on vacations, or making love often enough. The problem is the business side of life always has deadlines to meet and somebody monitoring them. The personal doesn't fit, so it gets put into the "when I get time to do" bin, and then of course may not get activated. A new problem for me is electronic mail that consumes time like a starving piranha, since I spend two hours a day answering and sending mail, never less than one hour, and my record last week was five consecutive hours.

Where does that new time eater come from, since it has to take it from other activities that I used to do before this wonderful, terrible technology took over part of my life? From reading the morning newspaper, or magazines, or watching TV, or taking a walk, or talking to friends, and so forth. The balance of life gets skewed more toward the professional and less toward the personal, so it is a new time drain that I am trying to cope with. All things considered, I would say that I work at being a psychologist about 60 hours a week, including many weekends. But now that old age is starting to take its toll with various ailments starting to crop up, I have to spend more time taking care of bodily and spiritual needs than I have in the past, rather than living the totally mental-professional life.

NAJP: To follow this thought, what are your goals to be working so hard at this point in an extremely successful career?

PZ: This may sound strange, but I am someone who never has specific, explicit goals that guide my behavior. I mostly slip into situations that have work agendas that I follow and generally succeed with, and then move on to the next item on my "Life to Do" list. I should organize my life better, just as I should organize the chaos in my home and school offices, but can't find time to do. My big goals are I want to be liked, to be loved, to be respected for what I do, to put new life into psychology, and better psychology into our lives, and to make all those I come into contact with to feel better about themselves in some way. Beyond those meta-intentions are not specific goals, but rather getting drawn into some proposal or other, giving in to some temptation or other. One of my weaknesses is the inability to say "no;" that personal failure gets me into doing things I should not, but may lead to unexpected joys.

For instance, I give too many guest lectures and colloquia because it is easier to say "yes" than "no" at the time of the cordial request, then I may regret it when it comes to having to prepare them and traveling long distances to the university or convention. The other side of going with flow of invitations is the invitation to be the creator of the Discovering Psychology PBS-TV series for Annenberg CPB. Somebody contacted me from Boston station WGBH, vaguely described the project, which sounded interesting, but might take a lot of time. Yet it could reach a lot of people beyond my classrooms. So, "Why not?" said I. It is a new teaching challenge, it could be fun. They paid me my Stanford release time salary for a year, but it took three years to complete the project. It was as much hard, deadline-dictated work as I have ever done, and forced me to put my text writing, research writing, and new research projects on the back burner. It actually cost me a lot of money to do this project, since it delayed publication of my textbook by a year, lowered my annual raises at Stanford since they depend on publications (in high citation, refereed journals), and I could not engage in any other supplementary income-making activities.

Because I did not have any long-term goals, I also did not negotiate for royalties or residuals, so have not made a penny from this enormously successful venture. The series is a 26-program introduction covering all of psychology made back in 1989. It has been showing for a decade to PBS audiences throughout the US and Canada, in ten other nations, in most colleges, and now in virtually all high schools. More than 70,000 students in Telecourses have gotten college credit for Introductory Psychology without a teacher, by watching my series and reading a textbook and passing a standardized test. Discovering Psychology series might be my most important contribution to psychology because of its broad and sustained impact on such a wide range of the public in so many countries. I like to believe it is attracting new students to the field of psychology by its appealing presentation of scientific and applied psychology. I hope to persuade the folks who run the show to make two new programs soon, one on cognitive neuroscience and another on cultural psychology, two new realms that psychology has entered in the past decade.

Not having clearly articulated goals has also meant that my research does not have long term focused agendas, but rather flows from topic to topic according to what comes out of a given study, or some idea that I have or challenge a student poses in class. So I end up having done research in a large number of totally unrelated areas because I have gone with what excited me at that moment in time, for example, affiliation, dissonance, persuasion, shyness, time perspective, cults, hypnosis, deindividuation, aggression, psychology of imprisonment, political psychology, prosocial and antisocial behavior, and more.

NAJP: That's interesting to hear, because I think that most of us probably do react to life more than we like to say. Maybe as Westerners, when we reconstruct it, we say, "I had a plan." We rationalize what we felt like doing at the time. I don't think you're unusual, although you clearly had sub-goals. Once something caught your eye, your goal was to uncover it or discover it, or do a program of research. You clearly had goals that took you beyond a few days or even a few years. You've been in a cultural mix and a university mix that has provided you with plenty of stimulation. And you've had a broad intellect, so you've been interested in too many things.

To what degree do you think that psychology has laws like physics or chemistry, as opposed to sociology or cultural anthropology where there is still a lot of subjectivity?

PZ: That's a tough question. "Laws" seem so pretentious. There's no question in my mind that psychology has a great many principles, demonstrated proofs, reliable generalizations that have real-world applicability in many domains, such as health. business, education, sports, law, and more. Our dedication to the scientific method and also to using our knowledge to improve the Human Condition, has made psychologists focus their attention on many vital problems that could be understood from experimental analysis, that benefited from the creative use of new technologies, and that had an eye toward application. Much of psychology is in fact, so much a part of of our every day life that we take it for granted.

We now not only have the dramatic demonstration experiments like Milgram's obedience studies or the Stanford Prison Experiment, but there are lots of psychologists who are doing parametric studies carefully extracting second and third order interactions, developing standard paradigms, tasks, measurement procedures that can be used to cumulate knowledge. That has been missing in the past, our work was too isolated, without the sense of building on earlier work. That is changing, and the best example can be found in the new approaches in the field of memory research. I think psychology has something to say in any domain where it is important to change the behavior of the individual or a small group by changing the context.

Elliot Aronson revealed in his elegant jigsaw classroom studies that it is possible to reduce prejudice in the classroom, enhance self-esteem in students, and also improve academic performance simply by allocating to students part of the information that they had to present as a group to the rest of the class, with each member's grade dependent on the contributions of all members of the group, including the minority kids. This approach has had powerfully positive effects in school systems all over the country.

The real thing psychologists have to offer is that we are sensitive to the dynamics of behavior. We know where to look, we know how to ask the right questions, and we know how to answer them with experimental, correlational, or other methodologies better than any other social science.

Let me mention just a few of the ways in which psychology has had an impact on everyday life, so much so that many of our concepts are embedded into daily practices and the way we see the world. For example, the importance of reinforcing childrens' appropriate correct behavior versus punishing undesirable behavior is now well accepted by most parents. That was a revolutionary idea provided by behaviorist psychologists. Its correlate is never punish the child, you only punish negative, undesirable behaviors. The concept of stress did not exist when I was a graduate student. The importance of stress in influencing cognitive functioning, physical functioning, quality of life has been shown in our research. Then we have gone on to specify how to minimize stress, not only in terms of self-management, but also changing the situation and learning more effective coping styles. That's but one important contribution of psychology to individual and national health.

There is less stigma about seeking out professional, clinical help for mental problems than there used to be. Psychologists have worked very hard to reduce such stigma. We have made inroads in the treatment of many forms of mental illness, improving the quality of life in the workplace, in athletic performance, to mention a few. We have recognized the vital importance of social support networks for sustaining health, and the devastating consequences of social isolation as precursors to pathologies of mind, body and spirit. There are many things that we have done that we can be rightly proud of, but instead we tend to be overly modest about the accomplishments of our field. In our teaching, many of us encourage students how to become more critical consumers of media persuasion tactics, and in the process I think we have helped make our society more sophisticated about sources of social influence.

One big problem, however, in analyzing the impact of psychology is on its effect in changing national institutions, such as the legal system or prisons. They have a very resistant inner structure to external criticism or new ways of doing things. For example, Scott Frazier, a social psychologist, head of Applied Research Associates in Los Angeles, does experimental research demonstrating the invalidity or impossibility of certain kinds of eyewitness testimony done under conditions of low illumination. He does psychometric analysis of the light source, and the distance from target to witness, and what is humanly possible for the sensory system to detect, thereby illustrating that a given witness could not have made his or her identification accurately. Research like that is beginning to change the attitude of some judges and lawyers, but many still resist and do not accept this scientific evidence. Beth Loftus has single-handedly had an enormous impact on the legal system in undercutting the previously alleged belief in the reliability of all eyewitness testimony using her experimental demonstration of the unreliability of memory recall of observed events when post-event information is suggested to the witness. But I and my colleague, Craig Haney, have had little success in changing any aspect of the correctional system from our research, writing, or advocacy. In fact, corrections in the U.S. is in much worse shape now than it was 25 years ago when we did our prison research (as we described in detail in our recent *American Psychologist article,* August, 1998).

NAJP: Any predictions about where the field will be in 25 years?

PZ: It's so hard to predict the future of the field. Ten years ago, in the last of the *Discovering Psychology* programs, we asked all the eminent psychologists we interviewed, "What do you think about the future of psychology." Half said it was going to become more fragmented with greater specialization; the other half said it was going to become more holistic and unified.

I'm just not sure where our field is headed. One part is clearly on a path to be more directed toward new technologies of imaging the functioning brain, and will attract more medical students, more post doctoral students, and fewer graduate students. In some departments cognitive neuroscience, or its variants, have split off from the rest of the psychology department. I deplore that change in the field because their students will not be fully educated as they become more narrowly focused on their specialization, and also the rest of the field loses access to these colleagues. As some of us go more molecular, others are moving more molar, for example, with cultural psychology becoming a new influential area of research.

For me, one of the most interesting changes happening right now is that gender reversal in psychology, with fewer males and more females being attracted to our field than ever before. Concurrent with that change is the increase in minorities majoring in psychology, and the reduction of white males (who may be attracted to newly emerging technology fields). It is interesting to consider what kinds of issues this new breed of psychologists will focus on, what kinds of research paradigms they will use, and how the field will be modified from what it was when I started, which was almost totally male-dominated? Surely greater emphasis on the positives and less on negatives, more on relationships, health, prosocial behavior, and less on aggression, illness, antisocial behavior. But perhaps also more correlational and applied than experimental and purely scientific, and surely less use if deception in research.

It seems to me that over time, psychology will become increasingly influenced by women psychologists as they move up into positions of power, especially as the old guard of white guys retire, or die in the next decade. I'm curious about how social psychology in particular, and psychology in general, will change as more and more women come to influence the agenda of research, teaching and publishing. There may be less interest in control as one of the main goals of psychology than on understanding, or finding meaning. I am hoping that as more white boys go into the specialized fields of psychology, like computational neuroscience, more women from diverse backgrounds will take up the Generalists' banner and champion the search for broad patterns of behavior. These patterns can lead to better ways of applying psychological knowledge to enhance the quality of everyday life.

NAJP: Thank you for your time and insight, Dr. Zimbardo.

Affective Information in Videos: Effects on Cognitive Performance and Gender

Terry A. Anderson
Oklahoma State University

Marc E. Pratarelli
Oklahoma State University

The effects of violence and other affective information in popular videos on cognitive performance were examined in college-age men and women. This study sought to control for positive vs. negative affect and male viewing preferences. Participants were randomly assigned to one of four conditions in which they viewed either a ten minute (a) humorous video segment, (b) an action video segment, (c) a violent video segment, or (d) a neutral segment. Participants then performed a word generation task as a measure of cognitive performance. Data were scored by quantitative and qualitative attributes including the atypicality of the words generated. Women who viewed violent, action, or humorous video segments generated significantly fewer exemplars and more common exemplars than did men. The present results suggest that the emotionally charged content-related information in many videos may differentially affect women by reallocating attentional resources during cognitive processing.

Studies have shown that movie videos with different types of affective material produce significant differences in the cognitive task performance of subjects who watched them (e.g., Isen & Daubman, 1984; Kline, Greene, & Noice, 1990). Some research has also shown that watching humorous video segments improved cognitive performance because it induced a positive affective state which is said to be more conducive to creativity (Isen & Daubman, 1984; Isen, Daubman, & Nowicki, 1987). In contrast, the results from studies that examined the

---

Author's note: We would like to thank Chad Healy for his assistance during data collection and Blaine Browne for his general assistance as well as statistical analysis, design, and editorial comments. We also wish to thank the many students who participated in the study and the helpful comments and concerns of the anonymous reviewers and the Editor.

Author's info: Correspondence concerning this article should be sent to Marc Pratarelli, Ph.D., 215 North Murray, Department of Psychology, Oklahoma State University, Stillwater, OK, 74078.

North American Journal of Psychology, 1999, Vol. 1, No. 1, 17-28.
©1999 NAJP Winter Garden, Florida

effects of viewing videos that induced negative affect are mixed. Isen et al., (1984; 1987) showed that depressing material that induced negative affective states did not appear to affect cognitive performance in men or women. Others have shown that in woman, negative affective material interferes with recently encoded information (Lang, Newhagen, & Reeves, 1996) as well as attention during cognitive processing (Calicchia, Moncata, & Santostefano, 1993; Williamson, Kosmitzki, & Kibler, 1995). This type of material was also shown to increase aggression (Bushman & Geen, 1990) and anxiety (Calicchia et al., 1993). The principal explanation for these effects is that women are socialized to avoid aggressive behaviors and thus are more reactive when exposed to them as a participant or merely as a viewer or bystander. In contrast, men have adapted to anxiety-provoking aggressive stimuli and thus are less affected when exposed to violent material.

Women also demonstrate more empathy toward others by being better able to identify with individuals who may be suffering or victimized in violent situations (Eisenberg et al., 1994; Pratarelli & Bishop, in press), or disenfranchised (Pratarelli & Donaldson, 1997). In general, individual differences between women and men suggest that each bring different gender-based perspectives, beliefs, attitudes, expectations, preferences and emotions to bear in their daily behavior, although the differences may be statistically very small. For example, as a group, women tend to have stronger skills in perceptual discrimination (Kimura, 1992), while men tend to be more sensitive to visual-spatial information and less adept at certain types of verbal processing. Arguably, these divisions would make men less likely to be reactive to the visual component of video material despite their acuity, but women better able to integrate the competing verbal and emotional information. Since all of these physical, cognitive and affective factors are part of the movie watching experience, one should expect differences in the cumulative effects on men and women. Due to the ever growing popularity and quantity of violent material that viewers can watch, the question of who is most affected by one dimension of the medium or another, and what their effects may be, becomes increasingly important.

Physiological arousal appears to be the first order effect of viewing violent scenes or pictures (Greenwald, Cook, & Lang, 1989; Lang, Dhillon, & Dong, 1995; Lang, Greenwald, Bradley, & Hamm, 1993; Mundorf, Drew, Zillmann, & Weaver, 1990). A major factor in physiological arousal is its relationship to emotional state. However, emotional state consists of processing at the autonomic level as well as the central nervous system level where cognition takes place. Thus, the two factors that must be considered in the context of viewing violent videos are what the viewer thinks, and what the viewer feels. These two variables have a loose correspondence with valence and arousal, the two principal dimensions of emotions (Lang et al., 1996). Videos with negative affective characteristics (negative valence) are likely to capture and hold one's attention because they elicit arousal. Attentional resources are thus allocated to the processing of the arousing stimuli in the video. Since the preponderance of attentional resources are allocated to the video and the arousal, fewer resources are left available for other cognitive operations. Hence the decrements seen in cognitive performance tasks.

Considering its close relationship with personal interest and preferences in the selection of viewing material, attention is another factor that must be considered in any explanation of the effects of affective information in videos. Lang et al. (1996) used their limited capacity information processing theory to predict the effects of negative video images on attention, capacity, memory, and emotion. The limited capacity attention theories (cf., Kahneman, 1973; Posner, 1978; Posner & Snyder, 1975) applied to viewing videos (Lang et al., 1996) argue that attentional resources will be allocated to particular tasks as a function of the attentional demands made by the emotionally arousing stimuli. In their study, subjects watched a graphically negative news video and responded with a button press each time they heard a tone presented in the background. Reaction times were measured before, during and after the presentation of the negative video. Not only did reaction times decrease when the negative video appeared, indicating that attentional resources had been reallocated to processing the negative video, but they continued for several minutes after the video passed (see their Figure 2, p.471). Their subjects also reported "feeling more aroused when viewing stories containing negative video" as compared to a neutral condition (p.470). Others have also demonstrated that arousal and attention both impact information processing as a function of the negative qualities of the stimulus (Bradley, Greenwald, Petry, & Lang, 1992; Lang et al., 1995).

With the exception of verbal and perceptual processing in women, and visual-spatial processing in men, individual differences attributable to genetics are rare and controversial. Thus, there is no *a priori* reason to suspect remarkable cognitive performance differences between men and women in the context of viewing and interpreting what they see in videos. However, the effects of prior experience (socialization) is a significant factor to consider in terms of how each gender frames the specific events seen in videos. For example, the mental schema for rape differs for women and men because realistically, the former are usually the victims while the latter are usually the aggressors. Each has an appreciation for the intensity, pain, fear, and violence of rape based upon their sex-role stereotypes and experiences, irrespective of whether they have actually raped or been raped. In view of the discussion earlier on resource allocation, attentional demands, arousal, valence, and self interest, the differential effects on women whose socialization has shaped schemas with negative characterizations of aggression and violence, we hypothesize that women will have fewer resources available after viewing emotionally charged videos. This logic would predict poorer cognitive task performance as compared to men because women allocated more attentional resources to processing the affective information. In contrast, the devalued emphasis men place on affective information by way of their sex-role typed socialization would predict that fewer attentional resources would need to be allocated to process affective information in videos, leaving more available for other cognitive operations.

The present experiment was designed to replicate the findings of Kline et al. (1990), and extend our understanding of the effects of viewing violent video material to include differential effects between men and women. Their study found that college students performed more poorly after watching a violent or negative video, but not after watching a positive (humorous) video. Their explanation was that poorer cognitive performance in a task requiring creativity was due to minimal activation of the semantic network. Although that explanation was not tested empirically, it was largely consistent with the resource allocation model of attention introduced earlier. However, because women and men differ in the signal value each ascribes to emotional information, and videos are essentially multimodal vehicles for the delivery of such information, a more discrete analysis of the data is warranted. Thus, we hypothesized that college women who viewed not only violent video material, but also any emotionally laden video material would generate both fewer and less creative responses than men. It was further hypothesized that in view of the effects of emotional valence on arousal and attention, the effects of negative/violent video should be more pronounced in women than in men, and more pronounced in comparison to videos with positive or neutral valence. To these ends, we added an important fourth condition with respect to Kline et al.s' method in order to control for interest. Since the few studies that examined gender differences always found decrements in women's rather than men's cognitive performance, we specifically normed and then selected a video that would be of significantly greater interest to men than to women. Again, using the logic of the attentional resource allocation model discussed earlier, it was hypothesized that if movie preference, i.e., interest, had any ties to attention, then the cognitive performance for men should be differentially affected.

METHOD

Participants

The 55 participants were 28 male and 27 female students solicited from psychology courses at Oklahoma State University (mean age = 20.7 years; SD = 2.4). Men and women were assigned to each of four video conditions in serial order as they volunteered. There were approximately equal numbers assigned to each condition. All were fluent speakers of Standard American English, had normal or corrected-to-normal vision, and normal hearing. They were offered extra course credit for their participation.

Materials & Procedure

Four 10-minute excerpts from commercially available videotapes were developed for use by the authors. The final selections and determinations were based on the representativeness of each video as examples of violent, action, humorous, and neutral film (i.e., no violence, action or humor). The neutral video did not evoke or elevate any form of emotional response in the judges. To select the videos, an anonymous survey was developed in which nine films were listed. Thirty-five students from the same general subject pool were asked to rank order the films according to their personal preferences. Since the videos listed were popular and contemporary, the instructions asked subjects to imagine that the nine movies listed were the only ones available to select from. They were also asked not to let their biases toward specific actors influence their rankings. The rankings were to be based on their preferences for the type of movie they were most interested in watching. The list included the movies: "Die Hard," "Titanic," "Mrs. Doubtfire," "My Best Friend's Wedding," "Bridges of Madison County," "Bill Cosby Live," "Eye for an Eye," "Independence Day," and "Fatal Attraction." The nine options were chosen because some were felt to be a mixture of common male and female stereotypes, and some met the stereotypes specifically. The survey revealed that indeed, the top choices for men were the action videos Die Hard and Independence Day, while for women they included My Best Friend's Wedding and Titanic.

Table 1 lists the means in descending order. On the basis of this ranking, Bill Cosby Live was selected as the humorous video because it was balanced in terms of gender preferences. Independence Day was selected as the action video that would hold men's interest more; Eye for an Eye was selected as the violent video because it was also ranked in the middle range and the 10 minute rape and murder segment of the victim was judged by all viewers sampled to contain the most violence; and a neutral video, a documentary on Scenic Oklahoma was selected because no one had ever heard of it. It was judged to be informative and sufficiently capable of maintaining a subject's attention without evoking any emotional responses including boredom or humor.

Videos were presented on a 19" color monitor at a comfortable listening level in a quiet dimly lit room. Subjects were given the basic instructions regarding the viewing of the film, but not informed about the specifics of the task they would perform afterward. Small groups of 3-6 participants viewed the film together. They were instructed not to talk during the experiment, nor to make emotional gestures or nonspeech sounds that might cause distractions to others or affect their perceptions. The experimenter sat silently behind the subjects. Subjects then viewed the video segment for their group assignment. Following the video, they were immediately handed a sheet of paper and a pencil and instructed to list as many different examples of birds as possible in five minutes. The experimenter insured that the subjects were not copying each other's answers.

RESULTS

The results of separate two-way analyses of variance (gender by video segment) for each dependent variable revealed significant main effects for the video segments condition for both quantity and atypicality, $F = 3.6$, $p < .02$; $F = 3.7$, $p < .02$. Significant main effects were also found for gender $F = 19.4$, $p < .0005$; $F = 11.3$, $p < .002$,

TABLE 1a Rank Order of Movie Preferences by Gender, Male

Movie Title	*Rank*	*Mean*
Die Hard	1	2.4
Independence Day	2	2.5
Eye for and Eye	4	4.5
Fatal Attraction	5	4.6
Best Friend's Wedding	6	4.7
Mrs. Doubtfire	7	4.8
Bill Cosby Live	8	5.4
Bridges of Madison County	9	7.5

TABLE 1b Rank Order of Movie Preferences by Gender, Female

Movie Title	*Rank*	*Mean*
Best Friend's Wedding	1	2.4
Titanic	2	3.8
Independence Day	3	4.2
Mrs. Doubtfire	4	4.9
Eye for and Eye	5	5.0
Die Hard	6	5.0
Bill Cosby Live	7	5.5
Fatal Attraction	8	5.6
Bridges of Madison County	9	6.6

Rank ordered preferences of nine contemporary movies for men (a) and women (b). A two-way analysis of variance (gender by movie) revealed significant main effects for both variables, but no interaction. Planned comparisons, however, revealed that only the top two preferences for both men and women were significantly different from the remainder of the list more times than any other items.

respectively. However, while there was only a hint toward an interaction between video and gender using quantity $F = 2.1$, $p < .1$, the interaction effect was significant using atypicality as the dependent variable, $F = 5.9$, $p < .002$. The mean number of birds listed by men was 27.6 (SE = 2.3), and for women 20.6 (SE = 2.2). The mean for originality for men was 63.2 (SE = 3.6), and for women 76.5 (SE = 5.1).

Table 2 lists the means and standard errors for each of the interaction cells. The scores for men in the sample showed little change across the four video conditions, whereas scores for women fluctuated considerably. Women generated significantly fewer words and lower creativity scores than their male cohorts in all but (1) the neutral video, and (2) the creativity score for the action video.

DISCUSSION

The thesis developed earlier suggested that the attentional resource allocation model and differential effects of processing affective information by women should produce fewer and less atypical exemplars after watching any video that contained more affective information as compared to a neutral condition. This would be shown by a larger numerical value on the originality variable. It was also argued that

TABLE 2a Means and Standard Errors for Videos by Gender Using Quantity

	Men		Women	
Type of Video	Mean	SE	Mean	SE
Neutral	29.0	2.38	27.8	2.71
Humorous	27.8	2.21	16.0	2.41
Action	27.2	1.97	21.9	1.37
Violent	26.5	2.56	16.7	2.18

TABLE 2b Means and Standard Errors for Videos by Gender Using Atypicality

	Men		Women	
Type of Video	Mean	SE	Mean	SE
Neutral	66.6	2.71	57.0	3.14
Humorous	66.1	2.50	87.8	7.56
Action	62.4	6.48	67.5	5.70
Violent	58.2	3.03	95.1	5.57

Means and standard errors for men and women as a function of the four types of movie videos that were viewed. Table 2a includes the data for number of birds listed by subjects, while Table 2b includes the data for the atypicality (originality) scores.

previous research had not taken into consideration the possible effects of viewing preferences or personal interest. If preferences had an impact, then purposefully selecting a video that would cause men to differentially allocate more attentional resources should reveal decreased cognitive performance in that condition. However, that effect was not observed. For men, there was no significant difference between the action video and the other three videos. Thus, we can be fairly confident that the differential effects between men and women are not attributable to gender-based preferences, but rather to emotional content. The results showed that watching either a humorous, action-packed, or violent video produced deleterious effects on cognitive performance, and only in women. Although the differences in originality for women between the three conditions varied, violence clearly had the greatest effect. It cannot be ruled out that although, in men, viewing preferences was not a factor, viewing preferences in women might have mitigated the deleterious effects in cognitive performance in the action video condition. However, the results of the initial survey listed in Table 1b showed that the video selected to conform to the male interest stereotype, "Independence Day", was actually ranked by women as the third most preferred out of nine videos. It remains to be seen empirically whether viewing preferences in women have the ability to counter the effects of affective loading in videos.

A rational interpretation of the present results is that in women, as a group, emotional/affective information is more salient (Eisenberg, 1983; Eisenberg et al., 1994) and they would be more affected by emotionally charged videos. The duration of that effect has not been sufficiently well examined in previous research. Nonetheless, if processing of the emotional content in videos causes women in particular to reallocate attentional resources to that demand, and attention is a finite resource, then it follows that women should have fewer attentional resources available for other cognitive processing demands. Men, however, are stereotypically less likely to use or display their feelings and emotions leaving more resources available to be allocated for the cognitive demands. Mens' behavior has been to solve problems directly while women tend to think more about the task and see if others agree with their solution (Tannen, 1990). Regardless of the explanation used to account for gender differences, the present effects are clear; men are not as affected as women by the emotional content in videos. However, in contrast to some of the previous research (Kline et al., 1990; Williamson et al., 1995), the effect is not specific to violence.

The present results revealed that violence generated the most decrements in cognitive performance, but the effect was not statistically very different from the effect that humor produced. It also remains to be seen whether the effect of humor is general, or specific to Bill Cosby videos. Future research should explore discrete differences within certain classes of videos and which factors influence such differences. Another possible explanation is that men have become more accustomed to violence than women and are thus desensitized. This would enable men to better separate negative emotions from cognitive performance. The present results are consistent with the few earlier studies (e.g., Kline et al., 1990; Williamson et al., 1995) that found differential effects in women, although they may not have tested men as a comparison group. In any case, these results suggest that cognitive processing in women is indeed differentially affected by the affective content in certain movie videos. Additional research needs to examine the time course of the effects on cognitive performance as well. The results from Lang et al.(1996) hint that the effects may only last a few minutes, or until physiological arousal returns to a pre-video baseline. Interestingly, in a

BEST COPY AVAILABLE

post-hoc analysis, Lang et al. also found that men and women were equally affected by the negative videos, but they only reported tests using behavioral measures on recognition, not physiological effects. With a power analysis it could be argued that the $p < .1$ effect they observed suggests that there is a trend toward a gender effect.

Given that attention is the principal construct underlying the resource allocation and limited capacity model, are cognitive operations that require little or no attention, e.g., automatic mechanisms for encoding and retrieval of memory, similarly affected by exposure to negative and positive video stimuli? Lang et al. found that emotional information actually enhanced recall during and immediately following the video, but interfered with recall of information encoded prior to viewing. Again, a post-hoc analysis using only behavioral data showed no significant effect. Future research should examine any differential physiological reactivity to emotional videos between men and women. By controlling additional variables within the videos, structural or content related, and by examining other internal variables like previous experience and personal bias, more can be learned about the factors that produce gender differences like the present ones. Finally, beyond gender differences, another area that warrants much more scrutiny is the effect that affective information in videos may have on male and female children, especially violent information. Violence is not only used to enhance arousal and attention by news organizations and the filmmaking industry, but it also plays a prominent role in many popular computer games.

REFERENCES

Battig, W., & Montague, W. (1969). Category norms for verbal items in 56 categories. *Journal of Experimental Psychology Monographs, 80,* 1-45.

Bradley, M., Greenwald, M., Petry, M., & Lang, P.J. (1992). Remembering pictures: Arousal and memory. *Journal of Experimental Psychology: Human Learning and Memory, 18,* 279-390.

Bushman, B.J., & Geen, R.G. (1990). Role of cognitive-emotional mediators and individual differences in the effects of media violence on aggression. *Journal of Personality & Social Psychology, 58,* 156-163.

Calicchia, J.A., Moncata, S.J., & Santostefano, S. (1993). Cognitive control differences in violent juvenile inpatients. *Journal of Clinical Psychology, 49,* 731-740.

Eisenberg, N. (1983). Sex differences in empathy and related capacities. *Psychological Bulletin, 94,* 100-131.

Eisenberg, N., Fabaer, R.A., Murphy, B., Carbine, M., Maszk, P., Smith, M., O'Boyle, C., & Suh, K. (1994). The relations of emotionality and regulation to dispositional and situational empathy-related responding. *Journal of Personality and Social Psychology, 66,* 776-797.

Greenwald, M., Cook, E., & Lang, P. (1989). Affective judgment and psychophysiological response: Dimensional covariation in the evaluation of pictorial stimuli. *Journal of Psychophysiology, 3,* 51-64.

Isen, A. M., & Daubman, K. A., (1984). The influence of affect on categorization. *Journal of Personality and Social Psychology, 47,* 1206-1217.

Isen, A. M., Daubman, K. A., & Nowicki, G. P. (1987). Positive affect facilitates creative problem solving. *Journal of Personality and Social Psychology, 52,* 1122-1131.

Kahneman, D. (1973). *Attention and Effort.* Englewood Cliffs, NJ: Prentice-Hall.

Kimura, D. (1992). Sex differences in the brain. *Scientific American, 267,* 119-125.

Kline, L. M., Greene, T. R., & Noice, H., (1990). The influence of violent video material on cognitive task performance. *Psychology in the Schools, 27,* 228-232.

Lang, A. (1990). Involuntary attention and physiological arousal evoked by structural features. *Communication Research,* 17, 275-299.

Lang, A., Dhillon, P., & Dong, Q. (1995). Arousal, emotion, and memory for television messages. *Journal of Broadcasting and Electronic Media, 39,* 313-327.

Lang, PJ., Greenwald, M.B., Bradley, M.M., & Hamm, A. (1993). Looking at pictures: Facial, visceral, and behavioral responses. *Psychophysiology, 30,* 261-273.

Lang, A., Newhagen, J., & Reeves, B. (1996). Negative video as structure: Emotion, attention, capacity, and memory. *Journal of Broadcasting & Electronic Media, 40,* 460-464.

Mundorf, N., Drew, D., Zillmann, D., & Weaver, J. (1990). Effects of disturbing news on recall of subsequently presented news. *Communication Research, 42,* 25-41.

Posner, M.I. (1978). *Chronometric Explorations of Mind.* Hillsdale, NJ: Erlbaum.

Posner, M.I., & Snyder, C.R. (1975). Attention and cognitive control. In R.Solso (Ed), *Information and Cognition.* Hillsdale, NJ: Erlbaum.

Pratarelli, M.E., & Bishop, J.A. (in press). Perception of estimated pain experienced during execution: Effects of gender and belief in capital punishment. *OMEGA Journal of Death and Dying.*

Pratarelli, M.E., & Donaldson, J.A. (1997). Immediate effects of written material on attitudes toward homosexuality. *Psychological Reports, 81,* 1411-1415.

Williamson, S.S., Kosmitzki, C., & Kibler, J.L. (1995). The effects of viewing violence on attention in women. *The Journal of Psychology, 129,* 717-721.

BEST COPY AVAILABLE

Infant Communication

Brian Vandenberg
University of Missouri-St. Louis

Infants are capable of surprisingly sophisticated communicative exchanges before the onset of speech. Through the use of nonverbal means, such as eye gaze, pointing, body posture and vocalizations, infants are able to secure the basic coordinates of space, time and agency that enable cooperation and coordinated action. Infants appreciate that others are not simply objects to be manipulated, but fellow communicators possessing intentions, and capable of understanding and responding to infants' messages.

Recent research reveals that infants are capable of surprisingly sophisticated communicative exchanges before the onset of speech. Through the use of nonverbal means, infants express intentions, exert influence, respond to another's intentions, and forge cooperative involvement. This paper provides an overview of infant communication prior to the development of speech.

THE FIRST YEAR

Human infants possess the capacity for bodily expression of emotions from the first hours of life (Malatesta, 1990). Newborns' capacity for emotional expression is but one aspect of their attunement to their social world. At birth, or shortly thereafter, infants prefer to orient toward the sound of the human voice, are capable of making remarkable perceptual discriminations in human vocalization, prefer to orient toward the human face, and are able to discriminate the smell of their mothers (Bloom, 1993; Vandenberg, in press).

In the first several months of life, infants are able to enter into, and dwell within a primitive communicative exchange with an adult. This is made possible by the growing ability of infants to control bodily movements and vocalizations. During this time, infants gain some control over limb, trunk and head movements, and are able to coordinate these with facial gestures to provide rudimentary, meaningful signals of emotion. Infants also are capable of more complex cooing and vocalization, and the beginning of a social smile occurs. In addition, eye gaze becomes more focused, allowing

---

Author's info: Requests for reprints should be sent to Brian Vandenberg, Psychology Department, University of Missouri-St. Louis, St. Louis, MO 63121.

North American Journal of Psychology, 1999, Vol. 1, No. 1, 29-34.
©1999 NAJP Winter Garden, Florida

for more meaningful eye contact and directed attention. What emerges at this point is not simply more coherent emotional expressions, but also an increase in the ability to adjust these responses to the expressions of others (Stern, 1985; Trevarthen, 1993a, b).

Infants' profound immaturity and dependencyresults in their being easily overwhelmed, and they have difficulty regulating their experiences and reactions. Infants' capacity to emotionally resonate with the expressive communications of others, however, enables caregivers to influence and organize their experience for them. Caregivers arouse pleasure and joy in their infants through communicative exchanges, but adjust their responses so as to not overwhelm them, and when infants are fussy or distressed, caregivers use singing, rocking, vocalizations and other communicative gestures to soothe their babies (Kopp, 1989). Caregivers serve an executive function, regulating their infants' bodily states and emotional reactions. Caregivers not only influence their infant's physical experience; they also shape and interpret infant communicative expressions. So, for example, infants may wave an arm, and caregivers may interpret it as a signal of "goodbye" or "hi." Caregivers continually interpret their infants' gestures and vocalizations within a complex communicative framework.

There is reason to believe that adults greatly overestimate the intentions of their babies, ascribing much more complex intentionsand meanings than the infants are capable (Stern, 1985). But the responses of caregivers are guided by these assumptions, and they thus shape their babies movements and vocalizations toward socially meaningful gestures and articulations.

Infants' imitations are also important, providing a highly potent avenue that affords the opportunity to acquire the appropriate communications displayed by their caregivers. From the first hours of life, infants are capable of crude imitations of select behaviors, such as tongue protrusion and mouth opening (Meltzoff, 1990). This is remarkable, as it involves matching an unseen part of their own body with the gestures of another, where it is impossible to visually check the correspondence between the two. These early imitative capabilities are part of the social attunement of infants. They also are important communicative acts confirming the babies' participation in a communicative exchange (Uzgiris & Kruper, 1992).

Although caregivers can powerfully influence and regulate their infants' experience, this is not a one-way exchange. Infants also modulate and influence their caregivers' expressions and experience. Not only do infants' communications elicit responses from their caregivers, but by turning away, crying, and bodily protests, infants exert their own direction on the exchange, communicate their refusal to be influenced and, perhaps, their desire to terminate the exchange (Trevarthen, 1993a). They are the nascent assertions of individuality and entail a sense of efficacy to influence, and even deny another's being.

COOPERATION FOR COMMON PURPOSE

Cooperation with Another

Intersubjectivity in the first nine months of life is marked by communicative exchanges where the focus is the exchange itself, and infants resonate with the emotional expressions of their caregivers. By the end of their first year, however, infants' horizons have widened to the point that they are able to monitor and use caregivers' gestures as guides for their own behavior, and are capable of joint ventures toward a shared goal (Moore & Dunham, 1995). Furthermore, objects are no longer inspected alone or presented to the infants by the caregivers, but become incorporated into mutual, cooperative activity between infants and caregivers. Infants coordinate their actions with their caregivers for a common purpose, and their communications and actions are therefore more voluntary and intentional (Stern, 1995).

There are a number of complex communicative abilities required for a cooperative exchange. One component is that the participants must be able to establish the object of joint venture, and understand and agree on what the other is thinking. Initially, caregivers are directors of most exchanges, bringing objects into mutual view, pointing to things outside immediate communicative expression, directing their gaze toward objects or acts of interest. Infants acquire the capacity to follow their caregivers' pointing, vocalization and looking, and thus join their caregivers on a common referent (Carpenter, Nagell, & Tomasello, 1998). Later, infants themselves become able to direct attention through pointing, vocalizations and eye gaze.

Establishing a common referent involves checking that the other person shares the same object of attention. One way infants do this is through gaze alteration, where they shift their gaze from the referent to their caregivers to see if the caregivers have joined them on the object of regard (Corkum & Moore, 1995). The caregivers' eye gaze and other expressions reveal to the infants whether a cooperative understanding has been reached. This capacity to monitor the response of caregivers is also manifest in social referencing. When infants are confronted with an uncertain situation, they shift their gaze to their caregivers, and use the caregivers' reactions to their situation as a reference for how to interpret and respond to the situation (Feinman, 1992). Another component of cooperative action is that the communicating parties must be able to repair, clarify or correct mistaken or ambiguous messages (Bates, 1979). When caregivers fail to respond to infants' efforts to establish a common referent, infants will often attempt to redirect caregivers' attention through redoubled efforts of vocalization, pointing and expressions of excitement and dismay (Bruner, 1975). Infants can be very insistent in their demands for establishing their referent as the object of common concern. Indeed, the negotiation of common referents can be a source of some struggle, as both parties try to influence the other about the desired topic of cooperation.

An additional feature of cooperative activity is the transcendence of the here and now, where reference is expanded beyond the immediate confines of the presented gestures. Once again, pointing and eye gaze are frequently used, first by caregivers and then by infants, to direct discourse beyond the immediate. Pointing is understood, not as signaling an immediate emotional state, but as directing attention to somewhere else (Franko & Butterworth, 1996; Uzgiris & Kruper, 1992). ***Here*** can now be differentiated from ***there*** and communication is given a spacial context.

Temporal differentiation also occurs, as infants direct attention to prior acts or events through deferred imitation. Unlike evoked imitation that mirrors immediately presented gestures, deferred imitation makes present a previously observed act. It is a significant development that requires that infants somehow internally retain and then re-present temporally displaced gestures (Meltzoff, 1990). Deferred imitation and ritualized gestures can serve as a communicative request to reconvene a prior communicative exchange, or can incorporate previously displayed expressions and relationships into ongoing discourse (Uzgiris & Kruper, 1992). Prior acts are temporally decontextualized and recontextualized. The past can be a referent, and can be used in the present to anticipate and direct the course of future communications. Infants are able to dissociate from the immediate here and now and splice together referents from an array of spatial and temporal contexts. Thus, just as space is differentiated into ***here*** and ***there***, time is cleaved into ***now*** and ***then*** (Rommetveit, 1979).

Finally, cooperative action involves the ability to coordinate actions with another in a complementary fashion. Individuals must understand for whom the referents of communications are intended, in order to coordinate expectations and make adjustments. They must be able to distinguish you from I, self from other, but also must have an appreciation of the reciprocity of actions and roles between self and other. A pointing gesture presumes both an I who does the pointing, and a you to whom the request for mutual regard is made. Monitoring whether the other has understood the gesture involves an appreciation of the other as someone who is also capable of pointing and directing discourse (Carpenter, Nagell, and Tomasello, 1998).

Thus, the basic coordinates of intersubjectivity emerge at this time. Space is differentiated into ***here*** and ***there***, time into ***now*** and ***then***, and agency into ***you*** and ***I*** (Rommetveit, 1979). These axes enable the coordination of "who, where, when, and how" that is essential for cooperative action. Infants become more situated in space and time, and the emergence of self involves a differentiation from others. These referential coordinates are established through bodily gestures and expressions providing the sensorimotorgrounding of understandingand communication that makes language possible (Bloom, 1993).

Rhythms of Expression

Rhythmic exchanges in the first months of life are often initiated by caregivers who offer short, repetitive utterances at regular intervals in "motherese," which involves singsong intonations and exaggerated pitch and modulation. This vocal style is employed by caregivers in a variety of cultures, despite marked differences in the linguistic characteristics of the native language (Papousak & Papousak, 1991). Caregivers invite infants to respond by ending their utterances in upward, exaggerated intonation, pausing for a beat to allow infants to respond. Caregivers seek eye contact, sometimes prompt bodily movement, and themselves may exaggerate facial and bodily movements in rhythmic synchrony. Infants, in turn, reply on the downbeat with coos, and coordinate bodily movements within the communicative meter (Trevarthen, 1993b). As voice and body become more developed the sophistication and complexity of expression deepens.

Infants become skilled communicators by the middle of the second year. Poised on the doorstep of language, their vocalizations have become conversational in their rhythms of give and take, anticipation and climax, and their patterns of intonation, phonetics and expressivity now approximate that of their native language. They also are able to synchronize vocalizations with complex bodily and facial expressions in prolonged sequences of discourse. These temporally expressive, gestural significant exchanges have a musicality, are a communicative dance.

CONCLUSION

Infants are capable of complex, nuanced communicative exchanges before the onset of speech. Through the use of nonverbal means infants are able to secure the basic coordinates of space, time and agency that enable cooperation and coordination of action with another. Their communications reveal that infants appreciate that others are are fellow communicators who can understand and respond to their messages. It is now clear that infants are capable of meaningful, communication long before they utter their first words.

REFERENCES

Bates, E. (1979). Intentions, conventions and symbols. In E. Bates, L. Benigni, I. Bretherton, L. Camaioni & V. Volterra (eds.), *The emergence of symbols* (pp. 33-42). New York: Academic Press.

Bloom, L. (1993). *The transition from infancy to language*. Cambridge: Cambridge University Press.

Bruner, J.S. (1975). The ontogenesis of speech acts. *Journal of Child Language, 2*, 1-19.

Carpenter, M., Nagell, K., & Tomasello, M. (1998). Social cognition, joint attention and communicative competence from 9 to 15 months of age.

Monographs of the Society for Research in Child Development, Serial 255, *63*, 4.

Corkum, V., & Moore, C. (1995). Development of joint visual attention in infants. In C. Moore & P.J. Dunham (Eds.), *Joint attention: Its origin and role in development* (pp. 61-83). Hillsdale, NJ: Lawrence Erlbaum Associates.

Feinman, S. (1992). *Social referencing and the social construction of reality in infancy*. New York: Plenum.

Franko, F., & Butterworth, G. (1996). Pointing and social awareness: Declaring and requesting in the second year. *Journal of Child Language, 23*, 307-336.

Kopp, C.B. (1989). Regulation of distress and negative emotions: A developmental view. *Developmental Psychology, 25*, 343-354.

Malatesta, C.Z. (1990). The role of emotions in the development and organization of personality. In R.A. Thompson (Ed.), *Nebraska symposium on motivation*: Vol. *37* (pp. 1-56). Lincoln: University of Nebraska Press.

Meltzoff, A.N. (1990). Foundations for developing a concept of self: The role of imitation in relating self to other and the value of social mirroring, social modeling, and self practice in infancy. In D. Cicchetti & M. Beeghly (Eds.), *The self in transition: Infancy to childhood*. Chicago: University of Chicago Press.

Moore, C., & Dunham, P.J. (1995). *Joint attention: Its origins and role in development*. Hillsdale, NJ: Lawrence Erlbaum.

Papousak, M., & Papousak, H. (1991). The meanings of melodies in motherese in tonal and stress languages. *Infant Behavior and Development, 14*, 415-440.

Rommetveit, R. (1979). On the architecture of intersubjectivity. In R. Rommetveit & R.M. Blakar (eds.), *Studies of language, thought and verbal communication* (pp. 93-108). London: Academic Press.

Stern, D.N. (1985). *The interpersonal world of the infant*. New York: Basic Books.

Stern, D.N. (1995). *The motherhood constellation*. New York: Basic Books.

Trevarthen, C. (1993a). The function of emotions in early infant communication and development. In J. Nadel and L. Camaioni (eds.), *New perspective in early communicative development* (pp. 49-81). Routledge: London.

Trevarthen, C. (1993b). The self born in intersubjectivity: The psychology of an infant communicating. In U. Neisser (ed.), *The Perceived Self* (pp. 121-173). Cambridge: Cambridge University Press.

Uzgiris, I.C., & Kruper, J.C. (1992). The links between imitation and social referencing. In S. Feinman (ed.), *Social referencing and the social construction of reality in infancy* (pp. 15-148) New York: Plenum.

Vandenberg, B. (In press). Levinas and the ethical context of human development. *Human Development*.

Defining Projection Techniques: The Irrelevancy of "Projection"

Edwin E. Wagner
Isle of Palms, SC

"Projection," a psychoanalytic concept, is unnecessary for defining the essential properties of a projective technique. A projective technique is a test characterized by *response latitude* (the capacity to evoke a wide range of individualized responses) and *congruency* (implicit matches between responses and external criteria). So called semi-projective techniques lack congruency. Projective techniques can be compared and contrasted in terms of congruency requirements.

DEFINING PROJECTIVE TECHNIQUES

A projective technique is generally regarded as a test consisting of ambiguous stimuli that, because there are no right or wrong answers, supposedly induces the subject to "project" his or her personality when responding. Projection, of course, is a psychoanalytic term that originally denoted the attribution of one's unacceptable thoughts, feelings and desires to others. As Rabin (1981) noted, however, projection, as it applies to projective techniques, was a historical accident related to the fact that psychoanalysis was the regnant theory of personality when projective testing first became popularized. It is the purpose of this paper to demonstrate that so called projective techniques can be logically defined without recourse to terminology borrowed from personality theory. This should make it easier for student and practitioner alike to gain a better understanding of the nature of projective techniques in general and the differentiating characteristics among specific projective instruments.

A projective technique can be succinctly defined as a standardized test that generates response latitude yet requires an underlying congruity between a response and an external criterion. The term "task" seems preferable to "ambiguous stimulus" since, as Peterson and Schilling (1983) argued, it is not just the stimulus but the combination of stimulus plus instructions that is responsible for engendering response latitude. If a subject were shown a Rorschach plate and asked to simply name the colors, the "test" would hardly qualify as a projective technique.

Author's info: Correspondence concerning this article should be sent to Edwin W. Wagner, Ph.D., 8 Fishers Alley, Isle of Palms, SC 29451

North American Journal of Psychology, 1999, Vol. 1, No. 1, 35-40.
©1999 NAJP Winter Garden, Florida

Response latitude, or the freedom to respond individualistically, has, of course, been noted in the past as being characteristic of projective testing. As Wagner (1995) observed, latitude also carries important implications for test construction and scoring. Projective tests cannot be reduced to "objective" formats such as true-false or multiple choice since such constraints eliminate the response latitude that is the *sine qua non* of a projective instrument. In a sense, an objective personality test *is* its items, *i.e.*, is composed of discrete statements the answers to which can be added up to produce scores. Conversely, scoring for a projective technique is always arbitrary. To be sure, authors can impose scoring systems on projective techniques, but this is a matter of preference and always subject to change, as the history of projective testing amply demonstrates.

Paradoxically, however, despite the fact that scoring is always arbitrary, every bona fide projective technique incorporates "congruity assumptions," *i.e.*, implicit relationships between responses and external criteria that, if violated, denote psychopathology. These assumptions are sometimes difficult to discern but, as will be shown, are critical for defining projective techniques as a class and differentiating among various types of projective instruments.

CONGRUITY AND EXTERNAL CRITERIA

Most psychologists would agree with the definition of a test criterion as ". . . a standard for judging the validity of a test (and) an accepted measure of the behavior under consideration" (Krathwohl, 1994, p. 350). There is, however, a specific criterion against which *some* test responses can be objectively judged, namely, *external reality*. The majority of intelligence test items, for example, are either factually correct or incorrect. On the other hand, responses to items on an "objective" personality test are usually subjective opinions that cannot, in themselves, be considered right or wrong.

Initially, this distinction between responses with and without objective empirical referents seems both obvious and trivial. However, the presence of objective criteria against which responses can be compared has a significant bearing on the detection of psychopathology for projective techniques.

In administering the Rorschach (1942), reluctant subjects are told that there are no right or wrong answers to the test. Although reassuring, this explanation is not really true since, explicitly or implicitly, every response will be compared to some real-world prototype. The proverbial bat on plate V is considered a reasonable percept because, given that we are dealing with ink blots that are not intended as exact replicas, the configuration of the blot does resemble what real bats look like. Moreover, acceptable Rorschach responses are *reciprocal* in that, having been exposed to a real life bat, most individuals could find its representation on plate V. Conversely, if told that plate V looks like a bat, a person who has never seen such a creature would probably recognize one in a real life setting (Wagner, in press).

At the extreme, some disturbed subjects ignore this reciprocal relationship by doing away with one-half of the equation—either slighting the blot or the real-world object. As has been demonstrated, such a disregard for blot or relevant object produces an absurdity that denotes psychopathology (Wagner, Wagner, Hilsenroth & Fowler, 1995; Wagner, 1998). Such responses are absurd in the sense that, once the underlying assumption is accepted, anything is permissible and legitimate comparisons among responses and subjects cannot be made. For example, the percept "a deer with wings" violates reality because such an entity does not exist and it is therefore impossible to compare (verify) the blot area chosen against a real-world criterion. Conversely, when a schizophrenic sees "the face of my mother" on a Rorschach plate, totally ignoring the blot in order to project a hallucinatory image, it is then the blot that has been violated rather than reality. In either case the possibility of comparing the blot to an external criterion has been vitiated, resulting in an autism (absurdity). Such absurdities have been considered "autistic" and indicative of illogical thinking (Rapaport, Gill, & Shafer, 1968).

The same approach can be applied to other projective techniques. If, on the Draw-A-Person test (DAP) (Machover, 1949), a subject draws a circle to represent a person, the response (circle) *mis*represents the external criterion (person) and can be considered lacking in congruity. The upshot of this analysis is that underlying congruities that determine the acceptability of responses are implicit in every projective task - whether they be drawings, stories or the identification of ink blots. This conclusion has far reaching consequences for classifying and differentiating among projective techniques.

CLASSIFICATION AND DIFFERENTIATION BASED ON CONGRUITY

It has long been recognized that some tests combine features of both objective and projective tests and should perhaps be designated as semi or quasi projective. Congruity provides a clear rationale for this distinction.

Completion techniques such as the Incomplete Sentences Blank (ISB) (Rotter, Lah, & Rafferty, 1992) do not, as a rule, depend on external criteria for interpretation. The ISB has much in common with objective personality tests in that the responses consist of subjective evaluations with no direct empirical referents, *e.g.*, "I like people, animals and flowers." Choice or ordering techniques such as the Color Pyramid Test (Pfister, 1950), similarly, cannot be scored as "right" or "wrong" and, further, response options are somewhat restricted, cutting down on the *response latitude* that, as has been previously noted, is the prime requirement of a projective technique. Like objective personality tests, completion techniques and choice or ordering techniques can be evaluated normatively and psychodynamically but they cannot be compared to objective external criteria as can, to use Lindzey's (1961) classification system, tests designated as association, construction and expressive techniques. These include the Rorschach, DAP, Thematic Apperception Test (TAT) (Murray, 1943), Hand Test (Wagner, 1962/1983), and Bender-Gestalt (BG) (Bender, 1938) (see Panek, 1997, for a recent review).

Once the principle of congruity is understood it becomes easier to analyze and interpret a given projective technique in a logical manner. For example, some tests are *criteria contingent* inasmuch as congruity cannot be examined until the external object or situation has been specified. The bat on plate V of the Rorschach cannot be compared to a real bat until the perception takes place. On the other hand, the BG designs are fixed standards against which a subject's "responses" (copies) are compared. Other important congruity-related factors concern identity in space versus activity across time. The Rorschach emphasizes shape congruity, the TAT situational congruity, *i.e.*, the similarity between what appears to be happening on the card and potential real-life events.

CONCLUSIONS

Definitional precision is an obvious aid in doing scientific work, whether it be theoretical or applied. Operationally, a projective technique can be defined in terms of latitude; analytically, it can be explicated in terms of congruity. This is not intended to deprecate psychoanalysis or, for that matter, any other personality theory, but merely to suggest that the term "projection" is imprecise, has too many possible connotations, carries with it a lot of historical baggage and is an unnecessary construct for defining a projective technique.

REFERENCES

Bender, L. (1938). A visual motor Gestalt Test and its clinical use. *Research Monographs No.3,* New York: American Orthopsychiatric Association.

Krathwohl, D.R. (1994). Criterion measures. In R.J. Corsini (Ed.), *Encyclopedia of Psychology* (Vol. I, p. 350). New York, N.Y.: John Wiley & Sons.

Lindzey, G. (1961). *Projective techniques and cross-cultural research.* New York: Appleton-Century-Crofts.

Machover, K. (1949). *Personality projection in the drawing of the human figure.* Springfield, IL.: Charles C. Thomas.

Murray, H.A. (1943). *Thematic Apperception Test: Pictures and Manual.* Cambridge: Harvard University Press.

Panek, P.E. (1997). *The use of projective techniques with persons with mental retardation: A guide for assessment instrument selection.* Springfield IL.: Charles C. Thomas.

Peterson, C.A., & Schilling, K.M. (1983). Card pull in projective testing. *Journal of Personality Assessment, 47,* 265-275.

Pfister, M. (1950). The Color Pyramid Test. *Psychological Research, 1,* 192-194.

Rabin, A.I. (1981). Projective methods: a historical introduction.. In A.I. Rabin (ed.), *Assessment with projective techniques: A concise introduction.* pp. 1-22.

Rapaport, D., Gill, M., & Shafer, R. (1958). *Diagnostic psychological testing.* (Revised Ed.) New York: Inter-national Universities Press, Inc.

Rorschach, H. (1942). *Psychodiagnostics.* (3rd Ed.) New York: Grune & Stratton.

Rotter, J.B., Lah, M.I., & Rafferty, J.E. (1992). *Rotter Incomplete Sentences Blank: Manual (2nd Ed.).* New York: The Psychological Corporation/Harcourt Brace Jovanich, Inc.

Wagner, E.E. (1983). *The Hand Test: Manual for administration, scoring and Interpretation.* Los Angeles: Western Psychological Services. (Original work published 1962).

Wagner, E.E. (1995). A logical analysis of projective techniques based on independence of items and latitude of response. *Perceptual and Motor Skills, 81,* 868-870.

Wagner, E.E. (1998). A logical analysis of Rorschach autisms. In L. Handler & M. Hilsenroth (eds.). *Teaching and learning personality assessment.* (pp. 375-390). Hillsdale, N.J.: Lawrence Erlbaum.

Wagner, E.E. (in press). *The logical Rorschach: A clinician's guide to screening for psychopathology.* Los Angeles: Western Psychological Services.

Wagner, E.E., Wagner, C.F., Hilsenroth, M.J., & Fowler, C. (1995). A taxonomy of Rorschach autisms with implications for differential diagnosis among thinking disordered patients. *Journal of Clinical Psychology, 51,* 190-293.

ST COPY AVAILABLE

Date Selection Choices in College Students: Making a Potential Love Connection

Christina M. Frederick
University of Central Florida

Craig S. Morrison
Southern Utah University

The present study examined the question of college student date selection using a multi-dimensional approach. One hundred thirty-three college students were asked to choose a potential date from four videotaped self-descriptions read by actors. The students were also asked to complete a self-report measure indicating the importance of 16 different characteristics in date selection. Results indicated that the most preferred date using the videotape methodology was the actor describing what he/she desired in a potential date. However, the self-report data showed that men placed more importance than women did on physical attributes of a potential date, while women favored characteristics associated with financial security. These results show partial support for the processes governing date selection as hypothesized by evolution theory.

Understanding behavior related to aspects of mate selection has recently attracted quite a bit of attention in the social psychological literature (Feingold, 1992; Kendrick, Groth, Trost & Sadalla, 1993; Singh, 1993; Wiederman & Allgeier, 1992). The rise of evolution theory and sociobiology has contributed to this interest and created a growing body of theory and research about mate selection (Buss 1988; Buss & Schmitt, 1993).

Evolution theory presents intriguing hypotheses about human behavior in the sexual arena. Buss (1994a) and Bailey, Gaulin, Agyei & Gladue (1994) have summarized this theoretical perspective well. It is the goal of all humans to reproduce in order to continue the survival of their own characteristics in the gene pool, but also to ensure the survival of the human race itself. However, men and women exhibit different means and

---

Authors' Note: We would like to thank Angela Morrill & Trevor Stewart for their contributions to this project.

Author info: Correspondence concerning this article should be sent to Christina M. Frederick, U. of Central Florida-Daytona beach, PO Box 2811, Daytona Beach, FL 32120-2811

North American Journal of Psychology, 1999, Vol. 1, No. 1, 41-50
©1999 NAJP Winter Garden, Florida

behaviors in reaching their ultimate goal. It is theorized that it is in men's best interest to mate with a number of women assuring that the men's characteristics are kept in the gene pool. Thus, men are attracted to women who visually appear to be healthy, disease free and show signs of fertility. Fertility cues, such as age and neotenous features, help to insure that men will choose women to mate with who are capable of producing offspring (Barber, 1995).

Women, on the other hand, go through a different process in mate selection. Women, due to their ability to bear children and their long term commitment to raising those children to adulthood, are motivated to select a mate who not only can father children, but who will invest in a woman and her offspring over time (Feingold, 1992). A woman, therefore, values monogamy and a partner who can provide material resources at a level sufficient to maintain the health and wellbeing of the woman and offspring of the union. Since a man can father children well into the later years of his life, signs of youth and fertility are not as important for women in mate selection. Indeed, the opposite may be true as concerns age. Since older men typically control more resources and have gained more power in their careers, women may actually seek out men older than themselves as possible mates.

Research testing these hypotheses about mate selection has supported the premises of evolution theory. When asked to specify desired qualities in a potential mate, men chose characteristics related to attractiveness, significantly more than women (Buss and Barnes, 1986). Women placed more emphasis on personality characteristics such as consideration and honesty significantly more than men did.

Further confirmation for these findings comes from cross-cultural research. Across 37 cultures, Buss (1994b; 1989) found that women valued financial success characteristics more than men did. Men, however, preferred signs of youth and attractiveness in a mate more than women did. The sexes were similar in that the personal qualities such as kindness and intelligence were highly valued by both men and women.

Attraction, Date Selection and Evolution Theory

Other studies have focused attention on dating and initial attraction in male-female relationships (Buss & Barnes, 1986; Morse, Reis & Gruzeh, 1973; Singh & Young, 1995; Smith, Waldorf & Trembath, 1990; Sprecher, 1989; Townsend, 1989). These studies have used a variety of methodologies to test the basic premises of evolution theory in primarily college-age populations.

In a study involving initial attraction and dating, Sprecher (1989) presented college students with written information about physical attractiveness, earning potential and expressiveness of a person of the opposite sex. Participants rated individuals described as high in all three attributes as most attractive. However, women were more likely than men to be influenced by earning potential and expressiveness in their estimate of initial attraction, while men were more influenced in their attraction rating by the physical attractiveness description. The work of Singh and Young (1995) also indicates the importance of physical attractiveness cues in dating relationships for men. College-aged men were shown female figures varying in body weight, waist to hip ratio and breast size. Overall, men preferred the female forms with slender bodies, large breasts and low waist to hip ratios, rating them as most attractive and most desirable for both casual and long term relationships.

Other studies have pursued questions about date selection, using stimuli such as personal ads, or photos, which may be similar to situations present in real-life dating and mating situations. Smith, Waldorf and Trembath (1990) reviewed personal ads and compared the content of these ads for men and women. Ads placed by men seeking women required physical attractiveness and thinness in a female partner significantly more often than did women's ads seeking men, while women's ads were more likely to mention interpersonal understanding as a desirable characteristic in a opposite sex partner.

A series of articles by Townsend and associates (Townsend & Levy, 1989; Townsend & Levy, 1990; Townsend & Roberts, 1993; Townsend, 1993) used color photographs as stimuli in making date selection decisions. Townsend and Levy (1989) had male and female college students view color slides of individuals with the same physical attractiveness level, but who were varied in their socioeconomic (SES) cues. Women were likely to find models exhibiting high SES status cues more acceptable for dating. Men reported willingness to have sexual relations with attractive models, regardless of their socioeconomic status, however men were less willing to enter a serious relationship with any of the models.

When the work was expanded to include male and female law students, results were still supportive of the tenets of evolution theory (Townsend & Roberts, 1993). Female law students were less willing to have sexual relations with any of the models and had greater concerns about male models' SES status when making date selection decisions. Male law students were more concerned with female models' physical appearance and attractiveness when making date selection decisions.

The Current Study

The current research investigated two questions related to date selection. First, the researchers wished to examine college students' dating preferences, as assessed through the use of videotapes of self-described potential dates. This is similar to technologies used by dating services in matching individuals with dates. It was hypothesized that men would prefer, as a possible date, a woman who emphasized physical appearance cues when describing herself on tape. On the other hand, it was predicted that female participants would be more likely to select, as a potential date, a man who emphasized status and success cues in his self-description.

Second, the study examined the relationship between individuals' date choices selected via videotapes and their self-reported desired date characteristics. Based upon previous research (Buss, 1994b), it was predicted that men would place greater emphasis on physical appearance and women would prefer high financial status, even in a self-report format.

METHOD

Participants

Participants were 133 college students (98 women, and 35 men), with a mean age of 20.4 years. The age of the participants ranged from 17 to 40. The mean age of the women in the sample was 20 years and the mean age of the men was 21.5 years. All participants were enrolled in a General Psychology class at a small western university. Fifty-six of the participants were freshmen, 45 were sophomores, 13 were juniors and 13 were seniors. Six students did not indicate class status. Eighty-seven percent of the participants reported that their relationship status was "single." Eleven percent of the sample was married, with the rest of the participants reporting that they were either divorced or separated from their spouses. The participants were given extra credit for their participation in research.

Measures

Demographics. Students were asked to provide information about their age, year in college (freshman, sophomore, junior or senior), and marital status (single, married, divorced or separated).

Date Characteristics Scale. This measure was designed for use in the present study. A list of 16 attributes was created, encompassing a variety of personal characteristics related to date selection. This list was similar to lists of characteristics used by Buss (1994b) in comparing mate characteristic preferences, although Buss' lists had 13 and 18 characteristics respectively. Participants were then asked to endorse, on a 7 point Likert scale, with 1=not at all important and 7=very important, how important each characteristic was to them in choosing a potential date. The purpose for creation of this measure was to compare these self-reported, date-selection preferences to participant's date selection choices made in the videotaped portion of the study. See Table 1 for a list of the characteristics.

TABLE 1 The Date Characteristics Scale: Means and Standard Errors for the Total Sample and by Sex

Characteristic	*Rating of Importance*					
	Total Sample		*Men*		*Women*	
	M	*SE*	*M*	*SE*	*M*	*SE*
Physical Attractiveness	5.52	.10	6.26	.18	5.23	.11
Health	5.77	.10	6.00	.19	5.69	.11
Communication Skills	6.29	.08	5.87	.14	6.47	.09
Same Religion	5.54	.19	5.29	.38	5.60	.23
Same social Class	3.83	.15	3.90	.29	3.82	.18
Same Major	1.56	.11	1.45	.21	1.63	.13
Level of Warmth	6.06	.08	5.77	.15	6.18	.05
Honesty	6.79	.04	6.71	.08	6.83	.05
Physical Fitness	5.10	.12	5.65	.22	4.89	.13
Wealth	3.66	.14	3.06	.27	3.93	.17
Financial Security	4.53	.14	3.52	.25	4.92	.15
Material Possessions	3.20	.14	3.00	.28	3.25	.17
Dressing Nicely	4.89	.12	5.29	.22	4.73	.13
Concern for Others	6.31	.07	6.03	.13	6.41	.08
Friendliness	6.50	.06	6.45	.12	6.52	.07
Same Life Goals	5.93	.12	5.87	.23	5.94	.14

Date Selection Video. Four self-descriptions used for date selection were created, each emphasizing a different primary self-description. Script one was a status/success-based scenario in which the actor described him/herself as "a go-getter" with a "great deal of financial stability" and expressed the belief that a "solid financial base is important to developing a strong relationship". Consistent with evolution theory, this scenario was predicted to appeal to women more than men in the date selection process. Script two portrayed an appearance-based scenario in which the actor described him/herself as fit, healthy and concerned about appearance as a key aspect of his/her personality. Personal statements in this scenario included: "Working out and being fit and healthy, so I can look and be my best, are a big part of my life. I'm very active and like to be outdoors….". It was hypothesized that men would be more likely to choose the actor reading this script as a potential date. Script three was a psychological warmth and concern scenario in which the actor portrayed him/herself as "warm, easy to talk to, a good listener, responsible and trusting". Since the third script reflects a concerned and altruistic nature, it was hypothesized that women would view this script as reflective of a partner who may be willing to invest emotionally in partner and offspring. Thus, it was hypothesized women would be more likely than men to choose the actor reading this script as a potential date. Script four was a control scenario in which the actor discussed what he/she was looking for in a date, but gave no personal description of self. Statements in this script included: "I would like to meet a person who likes to have fun and enjoys social activities. I am just looking for someone who is warm and friendly". This script is referred to as the "states wants" scenario.

Four men and four women prematched for level of physical attractiveness read each of the four scenarios on videotape. All eight actors were rated slightly above average in facial attractiveness, using a 10-point Likert scale with "5" being an average score. Four videotapes were created for each sex, with each actor reading a different scenario on each tape. Thus, each of the four male and four female actors, reading a different scenario, appeared on each tape to be viewed by the opposite sex participants. For example, on the first tape, actor 1 read the status scenario, actor 2 read the appearance scenario, actor 3 read the psychological warmth scenario and actor 4 read the "states wants" scenario. On the second tape, however, actor 4 read the status scenario, actor 1 read the appearance scenario, actor 2 read the psychological warmth scenario and actor 3 read the "states wants" scenario. All actors were videotaped from the shoulders and above to control for possible confounding of results due to height or body shape differences.

Procedure

The study was conducted in two parts. In part one, the participant viewed one of the videotapes of the four scenarios randomly selected by the researcher, and was asked to rank order his/her choice of dates with the first choice being the most desirable to the fourth choice the least desired. Male participants watched the female videotapes and female participants watched the male videotapes. Before watching the scenarios, each participant was instructed via videotape that they were to listen closely to what the actors said and base their decisions on the self-description. During these instructions, the participants were also instructed that they could rewind the videotape and listen to the descriptions more than once to help them make their choices. Participants were told that the actors were fellow students who had been asked by the researcher to prepare and read self-descriptions.

In part two of the study, participants completed a survey packet containing the date characteristic scale, and asking them to provide demographic information. Half the participants saw the videotape first and half completed the survey first. Trained research assistants were available in the room as each participant completed the study in order to direct the participants and answer any questions. After participating, participants were immediately debriefed as to the purpose of the study.

RESULTS

Date Preferences for Part One

Counts and probabilities for date selection are presented in Table 2. For the overall sample, participants were most likely to choose the "states wants" and least likely to choose the physical appearance scenario as a preferred date ($\chi^2(3) = 46.12$, $p<.01$). Results for both men ($\chi^2(3) = 9.79$, $p<.05$) and women ($\chi^2(3) = 38.10$, $p<.01$) mirrored those of the entire sample.

No significant differences were shown in men and women's preferred date selection in this sample ($\chi^2(3) = 1.65$, ns). However, using a logistic regression analysis, age was predictive of date selection choice ($\chi^2(3) = 9.77$, $p<.05$). The older the participant the more likely he or she was to choose the individual reading the "states wants" scenario as their preferred date.

TABLE 2 Counts and Probabilities Associated with the Most Preferred Date for the Total Sample and By Sex

Scenario	*Total*	*Men*	*Women*
Staus/Success	23 (17%)	6 (17%)	17 (17%)
Physical Appearance	11 (8%)	3 (9%)	8 (8%)
Psychological Warmth	35 (26%)	12 (34%)	23 (23%)
States Wants	64 (48%)	14 (40%)	50 (51%)

Date Selection Characteristics for Part Two

Means for all 16 date characteristics are provided in Table 1. Overall, honesty (M=6.79, SE=.04), friendliness (M=6.50, SE=.06) and concern for others (M=6.30, SE=.07) were the most important date attributes as rated by the participants in the study. Least important attributes for selecting a date included having the same major (M=1.56, SE=.11) and material possessions (M=3.20, SE=.14). Women placed greater emphasis on communication skills in a date than did men ($\underline{t}(131) = -3.65$, $p<.01$). Women also rated wealth ($\underline{t}(131) = -2.72$, $p<.01$), and financial security ($\underline{t}(131) = -4.79$, $p<.001$) as more important characteristics in a potential date than men. Men reported a nice physique as a more important date characteristic than women ($\underline{t}(131) = 2.95$, $p<.01$), as well as physical attractiveness ($\underline{t}(131) = 4.88$, $p<.001$).

DISCUSSION

Part one of the present study concerned itself with the date selection process used by college students. It was predicted, based on evolution theory, that male students would prefer to date a female who presented herself on videotape as physically attractive and whose self-description focused on appearance issues. On the other hand, it was predicted that women would most prefer a date whose videotaped self-description focused on material status and success. These hypotheses were not supported. For both men and women, the most preferred date was the individual who read the "states wants" scenario. This scenario centered entirely on what the actor was seeking in a potential date and included no directly self-descriptive statements.

The results of the videotaped portion of the present study contradict results of earlier studies that examined date selection from an evolution theory framework (Singh & Young, 1995; Sprecher, 1989; Smith, Waldorf & Trembath, 1990; Townsend & Levy, 1989). How, then, can the results of the present study be explained? A possible explanation for the popularity of the "states wants" scenario was that the scenario specifically listed desired qualities that participants could easily believe they possessed. For example, the "states wants" script mentioned friendliness and warmth as desired traits. Regardless of gender, most people feel they are friendly and warm individuals. Thus, both men and women chose the "states wants" scenario more frequently, because it included a description that best fit their own self-schema.

Part two of the study examined the importance of sixteen characteristics in picking a potential date. Results showed the most important characteristics in a date to be honesty, friendliness and a concern for others. Overall, these results were supportive of earlier cross-cultural work of Buss (1994b). Separately, men and women also showed preferences favorable to evolution theory and previous research. Men rated physical attractiveness and a nice physique as more important attributes when choosing a date than women. Women placed more importance than men did on financial security, wealth and communication skills.

The results of the videotaped portion contradict, and the self-report portion of the study confirms, results of previous studies. In the videotaped portion of the experiment, men were not swayed as much by attractiveness cues as was predicted and women were not as susceptible to material success cues as predicted. In the self-report portion of the study, however results were similar to previous research and exactly as would have been predicted by evolution theory.

In the present study, the videotape methodology has been presented as a viable means of assessing date selection choices in a college population. Replication of this research is suggested, however, to verify the present findings. Certainly, a larger sample of male participants should be surveyed in future studies. Researchers would also be advised to expand the scope of similar projects to include older and younger populations to follow-up on age-related changes in date selection strategies.

REFERENCES

Bailey, J.M., Gaulin, S., Agyei, Y. & Gladue, B.A. (1994). Effects of gender and sexual orientation on evolutionarily relevant aspects of human mating psychology. *Journal of Personality and Social Psychology, 66*, 1081-1093.

Barber, N. (1995). The evolutionary psychology of physical attractiveness: Sexual selection and human morphology. *Ethology and Sociobiology, 16*, 395-424.

Buss, D.M. (1994a). *The evolution of desire.* New York: BasicBooks.

Buss, D.M. (1994b). Mate preferences in 37 cultures. In W.J. Lonner and R. Malpass (Eds.), *Psychology and Culture.* Boston: Allyn and Bacon.

Buss, D.M. (1989). Sex differences in human mate preferences: Evolutionary hypotheses tested in 37 cultures. *Behavioral and Brain Sciences, 12*, 1-14.

Buss, D.M. & Barnes, M. (1986). Preferences in human mate selection. *Journal of Personality and Social Psychology, 50*, 559-570.

Buss, D.M. & Schmitt, D.P. (1993). Sexual strategies theory: An evolutionary perspective on human mating. *Psychological Review, 100*, 204-232.

Feingold, A. (1992). Gender differences in mate selection preferences: a test of the parental investment model. *Psychological Bulletin, 112*, 125-139.

Kendrick, D.T., Groth, G.E., Trost, M.R. & Sadalla, E.K. (1993). Integrating evolutionary and social exchange perspectives on relationships: Effects of gender, self-appraisal and involvement level on mate selection criteria. *Journal of Personality and Social Psychology, 64*, 951-969.

Morse, S.J., Reis, H.T. & Gruzeh, J. (1973, August). *Hedonism and equity in heterosexual attraction.* Paper presented at symposium on exchange theory and interpersonal relationships at the meeting of the American Psychological Association, Montreal, Canada.

Singh, D. (1993). Adaptive significance of female physical attractiveness: Role of waist to hip ratio. *Journal of Personality and Social Psychology, 65*, 293-307.

Singh, D. & Young, R.K. (1995). Body weight, waist-to-hip ration, breasts and hips: Role in judgements of female attractiveness and desirability of relationships. *Ethology and Sociobiology, 16*, 483-507.

Smith, J.E., Waldorf, V.A. & Trembath, D.L. (1990). "Single, white male looking for thin, very attractive....". *Sex Roles, 23*, 675-685.

Sprecher, S. (1989). The importance to males and females of physical attractiveness, earning potential and expressiveness in initial attraction. *Sex Roles, 21*, 591-607.

Townsend, J.M. (1993). Sexuality and partner selection: Sex Differences among college students. *Ethology and Sociobiology, 14*, 305-330.

Townsend, J.M., & Levy, G.D. (1989). Effects of potential partners' costume and physical attractiveness on sexuality and partner selection. *The Journal of Psychology, 124* (4), 371-389.

Townsend, J.M., & Levy, G.D. (1990). Effects of potential partners' physical attractiveness and socioeconomic status on sexuality and partner selection. *Archives of Sexual Behavior, 19*, 149-164.

Townsend, J.M., & Roberts, L.W. (1993). Gender differences in mate preference among law students: Divergence and convergence of criteria. *The Journal of Psychology, 127*, 507-528.

Wiederman, M.W. & Allgeier, E.R. (1992). Gender differences in mate selection criteria: Sociobiological or socioeconomic explanation? *Ethology and Sociobiology, 13*, 115-124.

A Study of the Personality of Violent Children

Elliott H. Schreiber
Rowan University

This was a study of the personality features of violent children. An analysis was made of a group of 20 children who committed violent acts. They were compared with a loosely-matched control group of 20 children. All children were between 5 and 12 years of age and were from middle and lower middle socio-economic backgrounds. Their WISC-3 scores were about average. These children and their parents were interviewed twice during a two-year span, with particular emphasis on eight selected personality-related issues. The results showed significant differences between the violent and control groups on seven of the personality features using chi square tests. Results for the parents paralleled those for the children. Some recommendations were made for further research.

There has been a great deal of aggression and violence in society as seen in movies, newspapers and on television. Violence has spread from adults to adolescents to children (Bandura, Ross & Ross, 1961; Berkowitz,1968; Coleman, Butcher, & Carson, 1996; Hicks, 1965; Schreiber, 1988, 1990). Today we see an alarming number of children committing murder in public schools (Lane, 1997). The work of Feshback (1970), Johnson (1972), Loeber (1990), Mussen, Conger,and Kagan (1995), Neale and Davison (1996), and Redl and Wineman (1951) motivated this research on the personality of violent children. More specifically, their work suggested the importance of the eight personality features used in the present study. This study sought to determine which personality features of violent children might distinguish them from "normal" children, loosely matched for age, IQ, geographic region, socio-economic class, ethnic background, and gender. This was accomplished by interviewing both parents and children.

Authors' info: Correspondence concerning this article should be sent to Elliott H. Schreiber, Ed.D., 708 Camden Ave., Moorestown, NJ 08057.

North American Journal of Psychology, 1999, Vol. 1, No. 1, 51-56.
©1999 NAJP Winter Garden, Florida

METHOD

Participants

The sample consisted of 40 children and their parents from the middle and lower middle socioeconomic classes. All children were between 5 and 12 years of age at the beginning of the study, with a mean age of approximately 9 years for both groups. Permission was obtained from the parents for the participation of their children in this study. The two groups of children included a clinical group of 20 violent children and a control group of 20 non-aggressive children.

The clinical or violent group consisted of 10 Euro-American, 7 Black and 3 Latin-American children. There were 12 boys and 8 girls in the clinical group. The control group had 10 boys and 10 girls; and included 12 Euro-American, 6 Black and 2 Latin-American children. All of the children had average intelligence as based on the Wechsler Intelligence Scale for Children, Third Edition. The mean IQ score for the violent group was 92 and the mean IQ score for the control group was 98. One child (and his parents) were dismissed from the study because his answers appeared contradictory in light of conflicting information provided by his parents.

Procedure

The violent children were obtained from special education classes for the emotionally handicapped of 4 public school systems. They had previously been assigned diagnostic classifications of oppositional defiant disorder, conduct disorder or attention-deficit disorder. The control group was selected from three public schools in the same geographical area and included kindergarten through seventh grade.

Each group was interviewed twice over a 2-year period by the author. The children were interviewed initially in their schools. Two years later they were interviewed at home. The purpose of the second interview was to determine if the children had made any progress. Information gathered at the second interview was not included in the present report. All parents were interviewed at home both initially and two years later.

The children were evaluated on the eight personality features which are based on the literature of Despert, (1970), Loeber (1985), Redl and Wineman (1951), and Schreiber (1988). These personality features were most commonly linked to violent behavior in children, according to the research literature. They included: (1) feelings of inadequacy, (2) feelings of rejection, (3) poor communication, (4) frustration, (5) anger, (6) feelings of guilt, (7) weak controls, and (8) overt aggression. The objective of this study was to determine if there was a significant difference between the two groups of children and the perceptions parents had about their children on these personality features. Individual interviews were used as the basis for differential analysis of the violent and control group. The children and the parents of both groups were interviewed separately for two hours on the first occasion and approximately one hour about two years later on the backgrounds and manifestation of the eight personality features. None of the children or their parents were made aware of the identities of the other children. The decision to assign each child to one category or another was made by the author. Decisions were made largely on the basis of responses to single and direct questions about the behavior of the child relating to each of the eight personality features. In the case of younger children questions such as "Do you have weak controls?" or "Do you show overt aggression?" were phrased in simpler language so that the child would more readily understand the intent of the question.

RESULTS

The findings on the interview responses of the clinical group and control group along with the findings on the parent interview responses were tabulated and analyzed with the use of chi-square statistical methods.

Table 1 includes the number of children in the clinical group and control group who responded with information that led to a "yes" or "no" categorization with respect to the eight personality features. There was a significant difference between the groups on all of the personality features except anger. However, it should be noted that the personality feature of anger was slightly but nonsignificantly more frequent in the clinical group members. This was also supported by the interviews with group members.

Table 2 contains the interview response categories of "yes" or "no" on the part of the parents of the clinical and control group members relative to the eight personality factors. The study included both parents except in the cases of two parents in the control group and three parents in the clinical group who were divorced or separated and not involved in the family picture. This table also reveals significant differences between the groups, with more stable behavior in the control group members as compared to the clinical group. Once again, anger was slightly but nonsignificantly higher in the clinical group, just as was the case in Table 1. Over-all, the parents of both groups showed responses that were similar to those of their children, and they appeared to be aware of the behavior adjustment and emotional controls from the very beginning of the development of their children.

TABLE 1 Interview Responses of the Clinical Group and Control Group with regard to Eight Personality Factors

Personality Factors	Clinical Grp. Responses Yes	No	Control Grp. Responses Yes	No	Chi-Sq.	Level of Signif.
Inadequacy		15	5	6	14	8.0
Rejection	14	6	7	13	5.0	<.05
Poor Comm.	16	4	5	15	10.0	<.01
Frustration	15	5	6	14	8.2	<.01
Anger	15	5	9	11	3.7	>.10
Guilt Feelings	4	16	14	6	10.2	<.01
Weak Controls	15	5	5	15	10.0	<.01
Overt Aggression	15	5	4	16	12.0	<.001

TABLE 2 Interview Responses of the Parents of the Clinical Group and Control Group with regard to Eight Personality Factors

Personality Factors	Clinical Group Yes	No	Control Group Yes	No	Chi-Square	Level of Signif.
Inadequacy	14	6	5	15	8.0	<.01
Rejection	15	5	6	14	4.0	<.05
Commun.	13	7	5	15	6.4	<.02
Frustration	14	6	6	14	7.2	<.01
Anger	15	5	9	11	3.7	>.10
Guilt	4	16	15	5	12.0	<.001
Weak Cont.	15	5	5	15	10.0	<.01
Aggression	15	5	4	16	12.0	<.001

DISCUSSION

The research of Johnson (1972), Loeber (1990), and Redl and Wineman (1951) indicated that childhood anger plays a large role in the development of violence in adolescent and adult life. However, the present study revealed a nonsignificant difference between the clinical and control groups with respect to anger. Both groups indicated that they manifested considerable anger in response to stressful situations. A major point that the parents of the control group made during the interviews was that setting specific behavioral limits was important in controlling aggression in their children. The parents of the clinical group reported the use of inconsistent discipline and vague guidelines for personal and social behavior.

Bandura, Ross, and Ross (1961), Berkowitz (1968), and Hicks (1965) showed that the observation of violence in films, books and television leads to further violence in life. However, the present author learned during the course of the interviews that both the clinical and control group observed some violence in movies, books and television, but the control group was less likely to act out this behavior in life. It was also observed that the parents of the control group were more likely to talk to their children about the films and pictures and more likely to emphasize that what was seen in the movies or television was fantasy or make-believe and not to be used with other children. The parents of the clinical group reported that they were less likely to speak to their children about the violence in films or television.

The present investigation showed that guilt was important in controlling aggression in the control group, according to both children and parents of this group. On the other hand, children and parents of the clinical group were more likely to state that no guilt feelings were manifested in regard to violent behavior. The children in the clinical group related that they were justified in committing a violent act because the "other" child hit them first. For example, one nine-year-old girl indicated that she had hung her kitten with a rope because the kitten had scratched her arm. Overall, the clinical group exhibited weak behavioral limits and low frustration tolerance as compared with the control group.

With the wisdom that comes from hindsight, and with an eye toward the future, additional studies of this sort should use interviews that are closely structured. Furthermore, additional interviewers should be used to check on inter-rater reliability.

The results of the interview responses of the children and parents with regard to the eight personality features, reveal significantly higher disturbances and more overt aggression on the part of the clinical group as compared to the control group. These findings indicate a need for further study on different age groups, larger samples and varying types of populations. In particular, there is a need for studies that can establish causal links between parental discipline and parental relationships with violent children.

REFERENCES

Bandura, A., Ross, D., & Ross, S. (1961). Transmission of aggression through imitation of aggressive models. *Journal of Abnormal and Social Psychology, 63,* 575-582.

Berkowitz, L (1968). Impulse, aggression and the gun. *Psychology Today,* 1968, 7 pp.

Coleman, J. C., Butcher, J. N. & Carson, R.C. (1996). *Abnormal psychology and modern life*. Glenview, Illinois: Scott, Foresman and Company.

Despert, J. L. (1970). *The emotionally disturbed child.* New York: Double Day & Company.

Feshback, S. (1970). Aggression, in P.H. Mussen (Ed.), *Carmichael's manual of child psychology, 2,* N.Y. Wiley.

Hicks, D.J. (1965). Imitation and retention of film-mediated aggressive peer and adult models. *Journal of Personality and Social Psychology, 2,* 97-100.

Johnson, R.N. (1972). *Aggression in men and animals.* Philadelphia: W.B. Saunders Company.

Lane, R. (1997). *Murder in America.* Columbus, Ohio: Ohio State University Press.

Loeber, R. (1990). Development and risk factors of juvenile antisocial behavior and delinquency. *Clinical Psychology Review, 10,* 1-41.

Loeber, R., & Schmaling, K. B. (1985). Empirical evidence of overt and covert patterns of antisocial conduct problems: a meta-analysis. *Journal of Abnormal Child Psychology, 13,* 337-352.

Montagu, A. (1968). Chromosomes and crime. *Psychology Today,* 6 pp.

Mussen, P. H., Conger, J. J. & Kagan, J. (1995). *Child development and personality.* New York: Harper & Row.

Neale, J. M., Davison, G. C., & Haaga, D. A. (1996). *Exploring abnormal psychology.* New York: John Wiley & Sons, Inc.

Redl, F., & Wineman, D. (1951). *Children who hate.* New York: Free Press.

Schreiber, E. H. (1988). *Aggression and violence in human behavior.* Lexington, Mass., Ginn Press.

Schreiber, E. H. (1990). *Abnormal behavior.* Lexington, Mass., Ginn Press.

Schreiber, E. H. (1998). Use of hypnosis with a case of acquaintance rape. *Australian Journal of Clinical and Experimental Hypnosis, 26,* 72-75.

Williamson, S., Hare, R. D. & Wong, S. (1987). Violence: Criminal psychopaths and their victims. *Canadian Journal of Behavior, 19,* 455-462.

BEST COPY AVAILABLE

Behavioral and Institutional Theories of Human Resource Practices: An Integrated Perspective

A. Amin Mohamed
Indiana University of Pennsylvania

David E. Terpstra
University of Mississippi

Although a number of theories have been developed to explain the determinants of human resource practices in organizations, few efforts have been made to integrate these theories. This paper demonstrates how both the behavioral and institutional theories could be integrated into a single theoretical framework. After comparing and contrasting the two theories, each theory is shown to apply to a specific type of organization.

Behavioral theory and institutional theory represent the most researched theories that attempt to explain the determinants of Human Resource (HR) practices in organizations (Jackson & Schuler, 1995; Wright & McMahan, 1992). By HR practices we mean the activities and policies that organizations use to manage their employees. Examples of HR practices include training, performance appraisal, selection, and affirmative action.

The behavioral theory argues that organizations select their HR practices to fit their internal characteristics and strategy (Jackson, Schuler, & Rivero, 1989; Schuler & Jackson, 1989). Institutional theory argues that organizations adopt the HR practices that fit their external environment's values and institutions (Kossek, Dass, & DeMarr, 1994; Scott & Meyer, 1991b).

A challenge that faces HRM scholars today is not the development of more theories, but rather the integration of existing ones. Integrating the different theories into a single framework will not only improve our ability to explain and predict the determinants of HR practices, but will also allow a critical evaluation of the current human resource management literature and research directions.

The purpose of this paper is to show how the institutional and behavioral theories can be integrated using a typological approach (Delery & Doty, 1996; Meyer, Tsui, & Hinings, 1993). A typological approach to integration would link different organizational types to HR

Author's info: Correspondence concerning this article should be sent to A. Amin Mohamed, Department of Management, Indiana University of Pennsylvania, Indiana, PA 15705

North American Journal of Psychology, 1999, Vol. 1, No. 1, 57-68
©1999 NAJP Winter Garden, Florida

practices. A typology of organizations developed by Scott (1987) will be used. This typology classifies organizations into four types. We intend to demonstrate that each of the institutional and behavioral theories is suitable to a unique organizational type.

This paper is composed of two parts. The first compares and contrasts the behavioral and institutional theories. The second part demonstrates how Scott's (1987) typology is used to integrate the two theories.

Comparing the Behavioral and Institutional Theories

Although both the behavioral and institutional theories have the same objective, explaining HR practices, each presents a unique argument regarding the nature of these practices. These differences result from the theories' divergent assumptions regarding the nature of the organization's environment and the motive for behavior. We will first explain the divergent assumptions and then move on to the theories' arguments.

Divergent Assumptions

One of the key differences between the two theories is the nature of the organization's environment. Although the behavioral theory does not focus on the external environment, it does hold an implicit assumption as to its nature. The theory assumes that the environment most relevant to organizations is the task environment. The task environment is composed of the entities that have exchange relationships and/or compete with the organization in the market (Dess & Beard, 1984). As such, the organization's customers, suppliers, creditors, and competitors are part of the task environment.

In contrast to the behavioral theory's emphasis on markets, institutional theory characterizes the environment as an elaboration of ceremonial rules, normative standards and requirements (Scott, 1992; Scott & Meyer, 1991a). These rules and requirements are referred to as institutions. An institution is a social order that is considered rational and necessary by a society (Jepperson, 1991). Institutions are considered rational since they specify how activities should be accomplished (Scott, 1990; Zucker, 1983). They are also necessary to specify what activities need to be carried out. The institutional environment conditions its support and endorsement of organizations on their adoption of the institutions. Meyer and Rowan (1977) proposed that as a result of such institutional pressures, organizations incorporate institutions into their structures and practices.

Another key difference concerns the motive of organizational behavior. The behavioral theory assumes that organizations can only survive if they are economically successful. Market forces reward economically successful organizations with the resources and support they need for survival. Thus, organizational behavior is driven by concerns for efficiency and effectiveness.

Institutional theory, on the other hand, argues that legitimacy rather than economic or market performance is the key to survival, and as such, is the motive of organizational behavior (Powell & DiMaggio, 1991). Legitimacy is defined as the degree of compatibility between an organization's means and ends and the social values and norms (Dowling & Pfeffer, 1975; Suchman, 1995). Organizations that adopt practices that are consistent with their environments' values and norms are perceived as legitimate. Legitimate organizations are rewarded with the resources and support necessary for their survival. For example, to do business with the U.S. government, U.S. companies must have an affirmative action program (Gatewood & Field, 1998).

The Theories' Arguments

The assumptions explained above are directly related to the arguments that each theory makes about HR practices. Table 1 reflects the main differences between the two theories. Regarding the behavioral theory, HR practices function as instruments for controlling the attitudes and behaviors of organizational members. Attitudes and behaviors are important because they affect organizational performance. Determining the appropriate attitudes and behaviors, and the HR practices to control them, depends on the organization's strategy and other internal characteristics, such as technology. For example, an organization following a differentiation strategy through innovation would select those HR practices that would cue employees to such strategy-supportive attitudes and behaviors as risk taking and a long term focus (Jackson, Schuler, & Rivero, 1989). As such, HR practices play a critical role in strategy implementation. More importantly, HR practices should function to improve the organization's economic or market performance.

In contrast to this instrumental view, the function of HR practices in institutional theory is to *symbolize* the organization's legitimacy. To survive, organizations need to appear legitimate. To appear legitimate, organizations adopt HR practices that are compatible with the environment's beliefs and values. Under these conditions, HR practices are not adopted to improve performance but to improve appearance. For example, some authors have hinted that firms may adopt codes of ethics only to appear socially responsible (Fredman, 1991).

TABLE 1 Comparison of the Behavioral and Institutional Theories

HR Practice	Behavioral Theory	Institutional Theory
Purpose	ControllingAttitudes & Behaviors, Instrumental	Symbolizes the Org. Legitimacy, Symbolic
Motive	Efficiency & Effectiveness	Legitimacy
Selection Process	Strategic Choice Proactive	Compliance Reactive
Selection Criteria	Best Practices Internal fit	Popular and Accepted Practices External fit
Management	Integration Evaluation Change and Adaptation	Decoupling No Evaluation Institutionalization and Stability

How HR practices are selected for adoption is also a point of divergence between the two theories. The behavioral theory argues that HR practiceselection is based on strategic choice. In this context, strategic choice means that the selection of HR practices is based on the organization's ability to make decisions without any external coercion (Aldrich, 1979; Child, 1972). In other words, organizations are capable of freely choosing among a number of HR practices (Jackson, Schuler, & Rivero, 1989). No external force can coerce the organizations into adopting any specific practice. Furthermore, the adoption process is triggered by the organization's own initiative.

Institutional theory, on the other hand, argues that organizations' adoption of HR practices results from compliance with institutional pressures (Scott & Meyer, 1991b). As such, organizations must adopt whatever practices the institutional environment advocates. This compliance implies that organizations do not enjoy free choice among alternatives, but are rather coerced into adopting specific practices. Compliance also implies that the adoption of HR practices is not based on the organization's initiative.

Another difference between the behavioral and institutional theories concerns the criteria used for selecting HR practices. The behavioral theory recommends that HR practices are selected based on their technical efficacy and internal fit (Huselid, Jackson, & Schuler, 1997).

Technical efficacy refers to the practice's ability to improve the organization's economic performance. Using technical efficacy as selection criteria requires organizations to select those HR practices that contribute to their performance. This has led researchers to study the relationship between HR practices and organizational performance (Terpstra & Rozell, 1993). Another criterion for selecting HR practices is internal consistency or fit between the practices (Schuler & Jackson, 1987). Internal fit exists when the adopted HR practices support each other (Baird & Meshoulam, 1988). This criterion requires organizations to select HR practices that complement rather than contradict and conflict with one another.

In contrast to the behavioral position, institutional theory emphasizes such ceremonial criteria as the prestige, popularity, and acceptance of the practice (Meyer & Rowan, 1977). Very little attention is given to the organization's technical business needs. Guthrie and Olian (1991) noticed that organizations adopt drug and alcohol testing as a "reaction to perceived societal, political, and industry trends without a systematic review of the organizations' specific needs, concerns, or objectives" (p.231). Additionally, Davis-Blake and Uzzi (1993) have suggested that companies may use some HR practices that do not fit their needs but appease powerful external groups. Another important institutional criterion for selecting HR practices is the fit with the external environment. The adopted practice must fit the environment's values and beliefs if the organization is to attain legitimacy. For example, Guest (1990) has suggested that the spread of human resource management could be partially explained by its compatibility with American ideology.

The last difference we discuss between the behavioral and institutional theories concerns the management of HR practices. The behavioral theory requires the integration, evaluation, and constant change of HR practices (MacDuffie, 1995). Integration means coordination among the practices and combining them into a single system. This is desirable because no single practice will be capable of eliciting all desired behaviors. Evaluating HR practices is also necessary to assess the impact of these practices on organizational performance. Because organizations have many HR practices to choose from, poorly performing practices could be replaced. Organizations may also constantly change their HR practices to fit their strategy and other internal characteristics. Failure to change the practices to fit the organizations' conditions could have negative consequences for the organization.

Institutional theory on the other hand, requires the decoupling, minimal evaluation, and the institutionalization of HR practices.

Organizations are sometimes required to adopt inconsistent practices, which if integrated or coordinated, may produce problems (Meyer & Rowan, 1977). To overcome this problem, organizations decouple or loosely couple practices, making them independent of one another (Meyer & Rowan, 1977). For example, job descriptions may not be used to develop performance evaluation methods, and performance evaluation results might not be used to make promotion decisions. Scott and Meyer (1991b) note that training programs that have been established in response to institutional pressures are less likely to be integrated within the organization.

Organizations may also provide superficial or minimal evaluation of their HR practices. This is important because, irrespective of the evaluation results, organizations cannot replace institutional practices without endangering their legitimacy. Furthermore, the failure of practices, which are considered rational, can only be blamed on the organization, not the practice. Saari and her colleagues note that although organizations spend billions of dollars on training programs, they do not evaluate these programs (Saari, Johnson, McLaughlin, & Zimmerle, 1988). Finally, organizations rarely change their adopted practices. Practices become so institutionalized that the probability of change is not considered (Eisenhardt, 1988).

In spite of the many differences between the behavioral and institutional theories, they should not be viewed as mutually exclusive alternatives. The differences in assumptions between the two theories make them suitable for describing the state of conditions in different types of organizations. This idea is demonstrated in the following section.

INTEGRATION OF THE THEORIES

In their efforts to identify the determinants of HR practices, scholars have studied a number of organizational attributes, such as the environment, structure, strategy, and technology. However, these attributes were studied independently of one another. Typological theory argues that some organizational attributes relate and occur together to explain specific phenomena (Meyer, Tsui, & Hinings, 1993). Organizations can be classified into types based on these attributes (Dess, Newport, & Rasheed, 1993). As such, a typology represents a specific combination of the organizational attributes that are hypothesized to determine an outcome of interest (Doty & Glick, 1994).

Scott's Typology

The institutional and task environments are not mutually exclusive (Scott, 1992). The existence of one environment does not preclude the existence of another. As such, the environments should be understood as occupying two different continua, rather than a single continuum or dimension, each ranging from strong to weak. In other words, both kinds of environments can coexist. Furthermore, each kind of environment is associated with a specific organizational motive. Understanding the two kinds of environments in such a fashion has enabled Scott (1987; Scott & Meyer, 1991a) to develop a 2x2 typology of organizations. This typology is based on different types of organizational environments and motives. Table 2 shows this typology. Below, we describe the types of organizations in more detail, and link these types to the behavioral and institutional theories. The first type of organization is referred to as the institutional organization. This type of organization operates in an environment characterized by strong institutional pressures and weak task pressures. Examples of institutional organizations include public schools, universities, and bureaucratic agencies (Scott, 1987). Since it is difficult to assign an economic or market value to the outputs of these organizations, the market plays a very limited role in determining their survival. As a consequence, institutional organizations are motivated to achieve legitimacy.

TABLE 2 A Typology of Organizations and HR Practices

Type of Organization	*Environment*		*Motive of Organization Behavior*	*Purpose of HR Practices*
	Institutional	*Task*		
Institutional	Strong	Weak	Legitimacy	Symbol of Organizational Legitimacy
Technical	Weak	Strong	Efficiency and Effectiveness	Enhance Task Performance
Hybrid	Strong	Strong	Legitimacy, Efficiency, and Effectiveness	Symbolic and Instrumental

Since legitimacy can be achieved by making the organization appear rational (Zucker, 1983), the organization adopts HR practices that facilitate such an appearance. That is, HR practices are not adopted on account of their technical efficacy or contribution to the organization's task. In institutional organizations the technical characteristics of the organizations are not important in predicting HR practices. In such organizations, HR practices are adopted for their symbolic rather than their instrumental value. As such, the organization's adoption of HR practices could be considered part of its impression management or window dressing efforts (Oliver, 1991).

For example, in their study of internal labor markets, Pfeffer and Cohen (1984) hypothesized that institutional organizations such as government bureaucracies would be more likely to adopt institutionalized practices than other types of organizations. It should be clear that the institutional approach is best suited to explaining HR practices in this type of organization.

The second type of organization is termed the technical organization. This organization operates in an environment that is strong in terms of task requirements, and weak in terms of institutional pressures. Manufacturing firms are examples of technical organizations (Scott, 1987). The organization's motive for behavior is to improve efficiency and effectiveness. Solving the organization's technical problems does this. As such, we could expect this organization to select HR practices based on technical criteria. Those practices that are likely to improve output quality and/or quantity will be selected for adoption. Said differently, those HR practices that fit the organization's technical characteristics are likely to be adopted. For example, training programs are used if, and only if, the organization believes that they will be instrumental in solving some technical problem. In light of this, the behavioral approach would be most suitable to this type of organization.

The third type of organization faces both strong task and institutional pressures, and, as such, is referred to as the hybrid organization. Examples of this type of organization includes banks and hospitals (Scott, 1987). To survive, hybrid organizations must meet the requirements of both kinds of environments. This implies that these organizations must prove to be legitimate, efficient, and effective. Organizations not only need to appear appropriate, rational, and modern (Meyer & Rowan, 1977), but they must also perform their task efficiently and effectively. As a consequence of these multiple motives, Scott and Meyer (1991a) have described these organizations as large and complex. It is possible that the HR practices of such organizations fall into two categories: Symbolic practices designed to create and maintain legitimacy, and instrumental practices designed to facilitate task accomplishment. As can be seen from this discussion, both the behavioral and institutional approaches can explain the adoption of HR practices in this type of organization.

Although it is possible to imagine the existence of a fourth type of organization that operates in an environment that is weak on both the institutional and task dimensions, such an organization is likely to be small (Scott & Meyer, 1991a), and have few, if any, formal HR practices.

CONCLUSION

Behavioral and institutional theories have been developed to explain the determinants of HR practices within organizations. These theories have been viewed as conflicting and mutually exclusive. The purpose of this paper is to present a perspective on integration. Using a typological approach, this paper demonstrates that the behavioral and institutional theories need not be mutually exclusive alternatives, but rather complementary. Each theory is better suited to explaining the adoption of HR practices in a specific type of organization.

Using a typological approach to integration may shed light on the usefulness of the concept of *best practices*. Labeling practices as best begs the question; best for what? Some HR scholars assume that organizational effectiveness is the purpose of HR practices, and they evaluate and rank practices accordingly. However, for certain types of organizations, legitimacy is more important for survival than effectiveness or efficiency. This suggests that for such organizations the best practices are those that will enhance their legitimacy rather than their effectiveness. To continue to label practices based solely on their impact on organizational effectiveness implies that: (1) practices that do not positively impact effectiveness will be considered inferior; and (2) organizations that do use these practices will be considered irrational. Such practices and organizations are not likely to be studied.

Finally, we hope that this paper will encourage human resource management scholars to use the typological approach to further investigate the determinants of HR practices within organizations.

REFERENCES

Aldrich, E. L.(1979). *Organizations and environments.* Englewood Cliffs, NJ: Prentice Hall.

Baird, L., & Meshoulam, I. (1988). Managing two fits of strategic human resource management. *Academy of Management Review, 13,* 116-128.

Child, J. (1972). Organizational structure, environment, and performance: The role of strategic choice. *Sociology, 2,* 1-20.

Davis-Blake, A., & Uzzi, B. (1993). Determinants of employment externalization: A study of temporary workers and independent contractors. *Administrative Science Quarterly, 38,* 195-224.

Delery, J. E., & Doty D. H. (1996). Modes of theorizing in strategic human resource management: Tests of universalistic, contingency, and configurational performance predictions. *Academy of Management Journal, 39,* 4, 802-835.

Dess, G. G., & Beard D. W. (1983). Dimensions of the organizational task environment. *Administrative Science Quarterly, 29,* 52-73.

Dess, G. G., Newport, S., & Rasheed, A. M. (1993). Configuration research in strategic management: Key issues and suggestions. *Journal of Management, 19,* 775-795.

Doty, H. D., & Glick, W. H. (1994). Typologies as a unique form of theory building: Toward improved understanding and modeling. *Academy of Management Review, 19,* 230-251.

Dowling, J, & Pfeffer, J. (1975). Organizational legitimacy: Social values and organization behavior. *Pacific Sociological Review, 18,* 122-136.

Eisenhardt, K.M. (1988). Agency and institutional theory explanations: The case of retail sales compensation. *Academy of Management Journal, 31,* 488-511.

Fredman, C. (1991). Nationwide examination of corporate consciences. *Working Women,* December, 39.

Gatewood, R. D., & Field, H. S. (1998). *Human resource selection.* Orlando, FL: The Darden Press.

Guest, D. E. (1990). Human resource management and the American dream. *Journal of Management Studies, 27,* 377-397.

Guthrie, J. P., & Olian, J. D. (1991). Drug and alcohol testing programs: Do firms consider their operating environment? *Human Resource Planning, 14,* 221-232.

Huselid, M. A., Jackson, S. E., & Schuler, R. S. (1997). Technical and strategic human resource management effectiveness as determinants of firm performance. *Academy of Management Journal, 40,* 171-188.

Jackson, S. E., Schuler, R. S., Rivero, J. C. (1989). Organizational characteristics as predictors of personnel practices. *Personnel Psychology, 42,* 727-786.

Jackson, S. E., & Schuler, R. S. (1995). Understanding human resource management in the context of organizations and their environments. *Annual Review of Psychology, 46,* 237-245.

Jepperson, R. L. (1991). Institutions, institutional effects, and institutionalism. In W. W. Powell & P. J. DiMaggio (Eds.), *The new institutionalism in organizational analysis* (pp.143-163). Chicago, IL: The University of Chicago Press.

BEST COPY AVAILABLE

Kossek, E. E., Dass, P. & DeMarr, B. (1994). The dominant logic of employer-sponsored work and family initiatives: Human resource managers' institutional role. *Human Relations, 47*, 1121-1149.

MacDuffie, J. P. (1995). Human resource bundles and manufacturing performance: Organizational logic and flexible production systems in the world auto industry. *Industrial and Labor Relations Review, 48*, 2, 197-221.

Meyer, J. W., & Rowan, B. (1977). Institutionalized organizations; Formal structure as myth and ceremony. *American Journal of Sociology, 83*, 340-363.

Meyer, A. D., Tsui, A. S., & Hinings, C. R. (1993). Configurational approaches to organizational analysis. *Academy of Management Journal, 36*, 1175-1195.

Oliver, C. (1991). Strategic responses to institutional pressures. *Academy of Management Review, 16*, 145-179.

Pfeffer, J. & Cohen, Y. (1984). Determinants of internal labor markets in organizations. *Administrative Science Quarterly, 29*, 550-572.

Powell, W. W., & DiMaggio, P. J. (1991). *The new institutionalism in organizational analysis*. Chicago, IL: The University of Chicago Press.

Rich, P. (1992). The organizational taxonomy: Definition and design. *Academy of Management Review, 17*, 758-781.

Saari, L. M., Johnson, T. R., McLaughlin, S. D., & Zimmerle, D. M. (1988). A survey of management training and education practices in U. S. companies. *Personnel Psychology, 41*, 731-743.

Scott, W. R. (1987). *Organizations: Rational, natural, and open systems*. 2ed. Englewood Cliffs, NJ: Prentice Hall.

Scott, W. R. (1990). Symbols and organizations: From Bernard to the institutionalist. In Oliver E. Williamson (Ed.), *Organization theory, From Chester Bernard to the present* (pp.38-55). New York, NY: Oxford University Press.

Scott, W. R. (1992). The organization of environments: Network, cultural, and historical elements. In J. W. Meyer & W. R. Scott (Eds.), *Organizational environments: Ritual and rationality* (pp.155-175). Newbury Park, CA: Sage.

Scott, W. R. & Meyer, J. W. (1991a). The organization of societal sectors: Propositions and early evidence. In Walter W. Powell and Paul J. DiMaggio (Eds.), *The new institutionalism in organizational analysis* (pp.108-140). Chicago, IL: The University of Chicago Press.

Scott, W. R., & Meyer, J. W. (1991b). The rise of training programs in firms and agencies: An institutional perspective. In L. L. Cummings & B. M. Staw (Eds.), *Research in Organizational Behavior, 13*, 297-326. Greenwich, CT: JAI Press.

Schuler, R. S., & Jackson, S. E. (1989). Determinants of human resource management priorities and implications for industrial relations. *Journal of Management, 15*, 89-99.

Suchman, M. C. (1995). Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review, 20*, 571-610.

Terpstra, D. E., & Rozell, E. J. (1993). The relationship of staffing practices to organizational level measures of performance. *Personnel Psychology, 46*, 27-48.

BEST COPY AVAILABLE

Wright, P. M., & McMahan, G. C. (1992). Theoretical perspectives for strategic human resource management. *Journal of Management, 18,* 295-320.

Zucker, L. G. (1983). Organizations as institutions. In S. B. Bacharach (Ed.), *Research in the Sociology of Organizations* (pp.50-70). Greenwich, CT: JAI Press.

Self-Estimates of Intelligence: A Cross-Cultural Study from Three Continents

Adrian Furnham
University College London
Great Britain

Peter Baguma
Makerere University
Uganda

Comparable groups of British (n = 100), American (n = 84) and African (n = 86) students estimated their own IQs on seven dimensions that factored into three higher order factors: verbal, numerical and cultural. The African students gave the highest estimates of their own overall IQs (113.67), while the Americans believed they had the highest numerical (114.85) and cultural (106.87) IQ scores. Males from all three groups rated their numerical IQs higher than did females. Males also believed more than females in sex and race differences in IQ. Compared to the Britons and Americans, the Africans were less likely to have taken an IQ test, believe in higher male versus female scores, believe tests are useful in educational settings, or believe some races are more intelligent than others. Results are discussed in terms of the limited research in the area.

Twenty years ago, Hogan (1978) found American females tended to underestimate their IQ scores compared to males. More recently, a study by Beloff (1992) stimulated renewed interest in this area (Bennett, 1996, 1997; Byrd & Stacey, 1997; Furnham & Rawles, 1995, 1999; Furnham & Gasson, 1998; Furnham, Clark & Bailey, 1999). She demonstrated that undergraduate male students gave significantly higher self-estimated overall IQ scores than did a comparable group of female students. Recent studies done in England, Ireland and Scotland have shown that undergraduate males estimate their own overall IQ, between 4 and 8 points higher than an equivalent group of females. Further, males rate their grandfathers, fathers and sons as more intelligent than their grandmothers, mothers and daughters (Furnham & Rawles, 1995; Furnham & Gasson, 1998).

Author's info: Correspondence concerning this article should be sent to Professor Adrian Furnham, Dept. of Psychology, University College London, 26 Bedford Way, London WC1 0AP. Fax 00 44 171 436-4276.

North American Journal of Psychology, 1999, Vol. 1, No. 1, 69-78.
©1999 NAJP Winter Garden, Florida

These findings are in accordance with a significant literature on gender differences in the self-evaluation of performance. This indicates a self-enhancing bias in men and a self-derogatory bias in women (Beyer, 1990), though this is task dependent. It may well be that intelligence tests are seen to be more of an area of male, rather than female, competence: hence the results. When asked to rate multiple intelligences, it is mathematical/spatial (numerical) differences that lead to the greatest, indeed only significant, differences in self-estimated IQ (Furnham, 1999; Furnham, Clark & Bailey, 1999).

There have been few, if any, direct cross-cultural comparisons in this area. An exception is Furnham, Fong & Martin (1999) who had comparable student groups from Britain, Hawaii, and Singapore estimate their own intelligence on each of Gardner's (1983) seven fundamental human intelligences. They found, as predicted, that males gave higher overall Self-estimates than females (109 vs 107). There were also significant cultural differences, with the British giving the highest overall scores (IQ = 109) compared to the Singaporeans (IQ = 106), and Hawaiians (IQ = 104). They also found, to confirm previous studies (Furnham, Clark & Bailey, 1998), that the seven intelligences factored comprehensively into three factors: *verbal* (verbal, intra-, inter-personal); *numerical* (mathematical, spatial); and *cultural* (musical, body-kinesthetic). There was a sex difference only on the numerical factor (males gave higher self-estimates than females), but there were cultural differences on the verbal and culture factor (the British gave higher estimates than Hawaiians).

Furnham et al. (1999) also asked six questions about psychological matters and again found evidence of both sex and cultural differences. Singaporeans believed more in sex and race differences in intelligence than did either the British or American students. The six questions factored into three identifiable factors, which concerned being pro IQ tests, and belief in systematic IQ differences and the use of IQ tests. Singaporeans seemed most experienced with, and in favour of, intelligence tests than the other two groups.

Furnham & Fong (1999) also found that estimated and psychometrically measured IQ were significantly correlated in two cultural groups. This finding has also been reported by Furnham & Rawles (1998) and Reilly & Mulhern (1995). Although a great deal of the variance was not explained, it does seem that these young people do have a reasonably accurate view of their own abilities.

This study is a comparison study of similar groups from Africa, America, and Britain. Whilst ability assessment across cultures is fraught with difficulty (Greenfield, 1997), this study looks at self-estimates of ability. There is consensus regarding race differences in IQ, though not their cause or consequences (Furnham, 1996) and the concept of IQ is well known. This study concerned replicating the sex difference effect in three very different countries. While it was hypothesised that females in all countries would offer lower overall IQ estimates for self than would males, it was not expected that there would be any cultural difference in IQ estimates. It was hypothesised that there would be a sex effect on the numerical factor with males giving higher estimates on mathematical and spatial intelligence than females. Following Furnham et al. (1995), it was also hypothesised that males would believe more in sex and race differences in IQ than females. No hypotheses were made about cultural differences.

METHOD

Participants

In all, 100 British (63 female), 84 American (30 female), and 86 African (35 female) psychology students took part. The mean age of the British was 24.12 years, the Americans 23.39, and the Ugandans 24.96. There was no significant difference in the age of the three groups (*F* 2,258;=1.16, ns). British students were from various colleges of London University; the American students from the Universities of Georgia and Tulsa; and the African students from the Makerere University (Uganda).

Questionnaire

All participants completed a simple one-page questionnaire. The questionnaire showed a normal distribution with means, standard deviations, and titles against each standard deviation. Thus 85 was labelled "low average" and 130 "superior." Thereafter, they were given a grid with the seven intelligence types labelled and described in rows and seven columns to rate themselves. The seven intelligences were taken from Gardner (1983) (Verbal, Mathematical, Spatial, Musical, Body-Kinesthetic, Interpersonal, Intrapersonal). They were also asked six questions about intelligence testing with simple yes/no answers, which had been used by Furnham et al. (1999). Participants were also required to indicate their age, sex and highest educational qualification. The questions were:

1. Have you ever taken an intelligence test?
2. Do you believe that they measure intelligence fairly well?
3. Do you believe that males are, on average, more intelligent than females?
4. Do you believe that intelligence is primarily inherited?
5. Do you believe that IQ tests are useful in educational settings?
6. Do you believe that some races are more intelligent than others?

Procedure

Participants were tested in groups in their own countries. They were debriefed after the study. It took approximately 20 minutes to complete the task.

RESULTS

Table 1 shows a series of three 2-way ANOVAs (sex x culture), first on the totalled IQ scores (the mean scores of the seven intelligences combined). There was a significant effect for culture: American students' self-estimates (113.67) were higher than those of either Africans (109.67) or Britons (109.16). Both Furnham & Gasson (1998) and Furnham & Fong (1998) found the seven multiple intelligences of Gardner (1983) factored into three factors: Verbal (verbal, interpersonal, intrapersonal), Numerical (mathematical, spatial), and Cultural (musical, body-kinesthetic). A 2 x 3 (sex x culture) ANOVA was then performed on the self-estimates on the scores on all three factors. The results in Table 1 show evidence of culture differences and sex differences. In line with previous findings (Furnham et al., 19[illegible], 1999), males gave higher estimates for numerical IQ than females. The cultural differences were fairly clear for overall IQ as well as numerical and cultural IQ. American students awarded themselves the highest scores. With other exception of "cultural IQ," the British students always awarded themselves the lowest scores.

Next, six 2x3 ANOVAs were computed on the six specific questions concerning intelligence testing. A clear pattern emerged. Five of the six analyses revealed an effect of culture. Africans were least likely, and the Americans most likely, to have actually completed an IQ test. Africans (particularly male) were more likely than the other two groups to believe that males were more intelligent than females, that intelligence is primarily inherited, that intelligence tests are useful in educational settings, and that people from certain races are more intelligent than those from some other (unspecified) races. There were also two clear sex differences: not surprisingly, males thought other males on the whole more intelligent than females. Males also believed more than females that some races were more intelligent than others. Only one interaction was significant, due to a majority of African males believing males are more intelligent than females.

DISCUSSION

These results partially confirm results from previous studies. Males did not rate their own overall IQ significantly higher than females, but they did have a belief in the superiority of their mathematical and spatial IQ. These findings tend to confirm those studies that have examined specific intelligence factors (Furnham, Clark, & Bailey, 1999; Furnham, Fong, & Martin, 1999). Whilst both sexes appeared to believe their verbal intelligence higher than their numerical or "cultural" intelligence, it was specifically on the numerical IQ that the major difference lay, with males giving themselves over 5 points more than females. Furthermore, whilst the majority did not agree to sex and race differences in overall IQ, a significantly larger proportion of males (than females) took this position.

What is striking are the cultural differences. Compared to a similar British group, American participants believed themselves (overall) to be more intelligent, particularly their verbal but also their numerical and "cultural" intelligence. The Africans and Britons gave similar scores on overall, numerical and cultural IQ, while the Africans and Americans gave similar scores on verbal IQ. The overall IQ estimates (mean for the seven estimates for all participants) was 110.70, somewhat lower than estimates from other studies. For instance, Beloff's (1982) Scottish students gave an overall self-estimate of 123.7, while Byrd and Stacey's

TABLE 1 Means (SD) and ANOVA results for totaled IQ and scores on the three factors

A. Overall IQ

	Male	Female	Total
Culture	X (SD)	X (SD)	X (SD)
African	110.12 (116.3)	109.00 (13.27)	109.67 (12.26)
American	113.72 (7.23)	113.64 (8.77)	113.67 (8.17)
British	111.24 (8.67)	107.98 (7.17)	109.16 (7.86)
Total	111.41 (9.80)	110.15 (9.74)	110.71 (9.77)

B. Verbal IQ

	Male	Female	Total
Culture	X (SD)	X (SD)	X (SD)
African	118.37 (12.59)	117.29 (12.85)	119.93 (12.64)
American	117.72 (11.12)	118.02 (9.40)	117.90 (10.00)
British	113.77 (10.85)	112.86 (8.99)	113.19 (9.66)
Total	116.82 (11.79)	115.67 (10.38)	116.18 (11.02)

Table 1 (continued)

C. Numerical IQ

	Male	Female	Total
Culture	X (SD)	X (SD)	X (SD)
African	111.39 (15.53)	103.64 (16.81)	108.24 (16.42)
American	114.85 (10.84)	111.91 (11.31)	113.04 (11.41)
British	112.21 (11.73)	105.19 (9.07)	107.72 (10.60)
Total	112.56 (13.29)	107.11 (12.59)	109.52 (13.16)

D. Cultural IQ

	Male	Female	Total
Culture	X (SD)	X (SD)	X (SD)
African	96.48 (20.28)	101.93 (21.47)	98.70 (15.90)
American	106.87 (11.55)	108.80 (13.05)	108.06 (12.40)
British	106.49 (11.90)	103.48 (12.09)	104.75 (12.05)
Total	102.23 (16.71)	104.92 (15.29)	103.73 (15.9)

ANOVA A. Overall IQ			ANOVA B. Verbal IQ		
Culture	Sex	CxS	Culture	Sex	CxS
4.81**	1.48	0.59	4.97**	0.16	0.90

ANOVA C. Numerical IQ			ANOVA D. Cultural IQ		
Culture	Sex	CxS	Culture	Sex	CxS
4.72**	13.42***	0.80	6.46**	0.54	1.61

*** p<.001 ** p<.01

(1993) New Zealanders gave an estimate of 121.7. However, the results are more comparable to the studies of Bennett (1996), also using Scottish students (average self estimated IQ 113.25) and Reilly & Mulhern's (1995) Irish students (average self estimated IQ 109.6).

Two other observations about the data in Table 1 are worth mentioning. First, the comparatively small sex difference between American males' and females' self estimates, compared particularly to the British. Indeed, their overall scores were almost identical, which may be an index of American sensitivity to, and education about, IQ issues and sex differences in general. Second, the standard deviation for all estimated IQs is high, particularly for the Africans, showing wide disagreement in the estimates. Interestingly, the standard deviations are highest when the means are lowest, which is illustrated by the Africans' estimate of cultural intelligence.

The results of Table 2 are particularly interesting. Looked at overall, the item that elicited most agreement (67.3%) was that "IQ tests are useful in educational settings." This level of agreement may reflect the case that the participants were all psychology students familiar with the history and use of IQ tests. It is doubtful if a population sample in the West would elicit such high agreement, as there appears to be increasing scepticism over the validity, and therefore usefulness, of these tests.

TABLE 2 Percentages of the six groups agreeing with each item and ANOVA results

	African		American		British	
% saying yes	Male	Female	Male	Female	Male	Female
Q1. Taken test	21.6	28.6	58.1	44.0	34.3	25.4
Q2. Measures	56.9	55.9	48.4	43.8	42.4	48.3
Q3. Sex diff.	56.9	20.0	13.3	4.00	27.3	7.9
Q4. Inherited	70.0	73.5	63.3	40.8	68.6	56.5
Q5. Useful	86.3	82.5	61.3	58.3	60.0	55.0
Q6. Race differences	58.8	48.6	29.0	8.0	39.4	27.4

		F LEVELS	
	Culture	Sex	CxS
Q1	7.06***	0.82	1.14
Q2	1.22	0.01	0.23
Q3	13.82***	21.48***	2.86*
Q4	3.25*	2.83	1.45
Q5	8.93***	0.42	0.01
Q6	12.44***	6.34**	0.33

*** $p<.001$ ** $p<.01$* $p<.05$

Means with similar superscripts are not significantly different from each other.

Nearly two thirds (62%) of the participants agreed that "intelligence is primarily inherited." This may well reflect the current debate and research findings that do indeed suggest the importance of genetic factors in intelligence (Lynn, 1994). It seems unlikely that students would have endorsed this statement a decade or so ago, when environmental perspectives appear to have dominated over hereditarian ones (Furnham, 1996).

Just under half the participants (49.28%) believed IQ tests "measure intelligence fairly well." This could be seen to be evidence of healthy scepticism on the part of students or, on the other hand, cynicism about the validity of the measures they have been exposed to or read about. There were no sex or cultural differences on this item.

There were fairly large cultural differences on the question about whether the participants had ever taken a test. About half (51.05%) of the Americans, a third of the British (29.85%) and a quarter of the Africans (25.1%) claimed to have taken a test. No other details were obtained as to what test was taken, how many times it was taken, or when, which could be very interesting and relevant to the central topic of this paper.

Perhaps the most interesting results occurred for the question on race and sex differences in IQ. There were both culture and sex differences, which showed very similar findings. African males mostly believed in sex and race differences (56.9%, 58.8%) with American females least endorsing these differences (4.0%, 8.0%). All groups believed more in race differences than sex differences, though the pattern was similar. However, this may be simply due to the fact that the sex differences question specified which sex (ie males) was superior while the race difference question did not. Thus it is possible that black African males may well believe in the IQ superiority of their own group. Overall, these results do provide more evidence of male hubris on the topic. Certainly it would be particularly enlightening to compare the results of these simple questions with both a general population sample, and also a sample of experts.

These cultural differences may be due to several factors: American, and to some extent, African hubris or British self-deprecation; actual IQ differences between the three groups, sampling incompatibility; or actual experience of, and feedback from, different tests. If self-estimates of IQ are self-fulfilling prophecies, the results are worth replicating and extending to bigger samples (Furnham & Gasson, 1998).

REFERENCES

Beloff, H. (1992). Mother, father and me: Our IQ. *The Psychologist, 5,* 309-311.

Bennett, M. (1996). Men's and women's self-estimates of intelligence. *Journal of Social Psychology, 136,* 411- 412.

Bennett, M. (1997). Self-estimates of ability in men and women. *Journal of Social Psychology, 137,* 540-541.

Beyer, S. (1990). Gender differences in the accuracy of self-evaluation performance. *Journal of Personality and Social Psychology, 59,* 960-970.

Byrd, M. & Stacey, B. (1993). Bias in IQ perception. *The Psychologist, 6,* 16.

Campion, J. (1992). Gender prejudice and IQ. *The Psychologist, 5,* 456.

Cattell, R. (1987). *Intelligence: Its structure, growth and action.* Amsterdam: North-Holland.

Furnham, A., (1996). *All in the Mind.* London: Whurr.

Furnham, A. (1999). Parental estimates of their children's multiple intelligences. *British Journal of Developmental Psychology.* In press.

Furnham, A., & Fong, G. (1999). *Self-estimated and psychometrically measured intelligence: A cross-cultural and sex difference study.* Paper under review.

Furnham, A., & Gasson, L. (1998). Sex differences in parental estimates of their children's intelligence. *Sex Roles, 38,* 151-162.

Furnham, A. & Rawles, R. (1995). Sex differences in the estimation of intelligence. *Journal of Social Behavior and Personality, 10,* 741-745.

Furnham, A., & Rawles, R. (1999). Correlation between self-estimated and psychometrically measured intelligence. *Journal of Social Psychology.* In press.

Furnham, A., Clark, K., & Bailey, K. (1999). Sex differences in estimates of multiple intelligence. *European Journal of Personality.* In press.

Furnham, A., Fong, G., & Martin, N. (1999). Sex and cross-cultural differences in the estimated multi-faceted intelligence quotient score for self, parents and siblings. *Personality and Individual Differences, 26.* 1025-1034.

Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences.* New York: Basic Books.

Greenfield, P. (1997). You can't take it all with you: Why ability assessments don't cross-cultures. *American Psychologist, 52,* 1115-1124.

Hogan, H. (1978). IQ self-estimates of males and females. *Journal of Social Psychology, 106,* 137-138.

Lynn, R. (1994). Sex differences in intelligence and brain size. *Personality and Individual Differences, 17,* 257- 271..

Reilly, J., & Mulhern, G. (1995). Gender difference in self-estimated IQ: The need for care in interpreting group data. *Personality and Individual Differences, 18,* 189-192.

Swim, J. (1994). Perceived versus meta-analytic effect sizes: An assessment of the accuracy of gender stereotypes. *Journal of Personality and Social Psychology, 66,* 21-36.

BEST COPY AVAILABLE

Thurstone, L. (1938). *Primary mental abilities*. Chicago: University of Chicago Press.

Turner, J. (1987). *Rediscovering the social group: A self-categorisation theory*. Oxford: Basil Blackwell.

BEST COPY AVAILABLE

When the Going Gets Tough, the Tough Get Going: Effects of Order of Item Difficulty on Multiple-Choice Test Performance

Nicholas F. Skinner
King's College, The University of Western Ontario

In a multiple-choice testing situation, students received immediate question-by-question feedback and were required to hand in the first half of the test before being given the second half. After answering difficult items first, students averaged 85% on later easy items; students doing the same easy items first averaged only 70% (as did a comparison group tested traditionally). This result suggests that an initial setback may have a salutary effect on subsequent performance, and challenges the conventional practice of putting a few easy items at the beginning of a test to "get students off on the right foot."

Respect for scientific rigor notwithstanding, teachers of psychology (like their students) often operate according to widely accepted but empirically unverified rules of thumb (Buckalew, Skinner, & Ross, 1990). One such piece of folk wisdom is the belief that students will perform optimally if their confidence can be bolstered by success on several easy questions judiciously placed at the beginning of a multiple-choice test.

In the only thorough examination of this assumption, Lafitte (1984) concluded that "the studies reported in the last 25 years have yielded inconclusive and, sometimes, conflicting results" (p. 212). That these and subsequent investigations have not been fruitful may be due to a serious (if understandable) design limitation, namely, that in all cases students completed multiple-choice tests in their entirety, with the result that researchers could never be certain of the order in which questions were *actually* answered. It could be safely assumed that students would generally proceed from beginning to end on a test in which the first questions were easy and later ones hard. However, in the difficult-to-easy format, because of the challenging nature of the initial items, students might first read through most of the questions and then more or less work backward through them, in effect responding to the test in an easy-to-difficult fashion.

Author info: Correspondence concerning this article should be sent to Nicholas F. Skinner, King's College, 266 Epworth Ave., London, ON, Canada N6A 2M3

The North American Journal of Psychology, 1999, Vol. 1, No. 1, 79-82.
©1999 NAJP Winter Garden, Florida

Accordingly, the present study investigated whether student performance is affected by the order of presentation of multiple-choice questions of varying difficulty. To compare the impact of different orders of item difficulty properly, the design guaranteed (a) that test items were answered in the intended order, and (b) that students received immediate feedback on the correctness of each response—to eliminate the (often considerable) discrepancy between how well students *think* they are doing and their *actual* performance.

Heuristically, a logical case could be made for five possible outcomes. First, on the basis of past research (e.g., Lafitte, 1984), it could be predicted that order of item difficulty would have no impact on performance. Second, it might be argued that the positive carryover created by the knowledge that they had done well on the Easy items making up the first half of the test could result in students doing better than expected on subsequent Difficult questions. This could be characterized as a "nothing succeeds like success" effect. On the other hand, it could be plausibly suggested that good performance on initial Easy items might breed an overconfidence that would impact negatively on Difficult items attempted later—a "pride goes before a fall" effect. Fourth, as had been suggested by some early pilot data (Skinner, 1987), students' performance on Easy items done second might suffer because of increased anxiety and decreased confidence experienced as a consequence of having scored poorly on prior Difficult items—a "blown out of the water" (or, perhaps, learned helplessness) effect. Finally, it could be reasonably hypothesized that unsatisfactory results on the first (i.e., Difficult) half of the test might give students added incentive to recoup their earlier losses by doing well on the second (i.e., Easy) half—a "when the going gets tough, the tough get going" effect.

METHOD

Participants

Participants were 88 students in an introductory psychology class at a Canadian college. There were 57 females and 31 males with an average age of 19.15.

Procedure

Prior to a regularly-scheduled 40-item multiple-choice test in an introductory psychology course, students chose to complete the test in either a *Standard Test* (traditional) or *Divided Test* format. They were informed that the *Standard Test* consisted of a single block of 40 questions (undivided test), and that test results would be available at the next class (delayed feedback). Students were also told that the *Divided Test* format would involve immediate question-by-question feedback as to the correctness of each chosen answer, plus division of the test into two physically separated 20-item halves. It was explained that these manipulations would allow subsequent examination of any differences that might occur as a result of (i) "massed practice" (*Standard Test*) vs. "distributed practice" (*Divided Test*) effects or (ii) the order in which questions were presented.

The *Divided Test* consisted of easy and difficult sections. Items in both sections had been pre-selected from previous tests using the traditional index of percentage correct; Easy items had a difficulty index of 70% and Difficult items 40%. On the *Standard Test*, which contained the same 40 items, the first four items were easy, after which order of item difficulty was randomized.

Approximately one-third of the class (18 females, 10 males; mean age 19.3 years, range 17-33 years) selected the *Standard Test*. Among those students choosing the *Divided Test* format, 19 females and 11 males (mean age = 19.1 years, range 17 - 23 years) completed the Easy section first, and received the Difficult questions *only after they had handed in the Easy section*, i.e., Easy-Difficult group. The Difficult-Easy students (20 females, 10 males; mean age 19.2 years, range 18 - 24 years) were given the Easy section after handing in the Difficult section. Students received knowledge of results immediately via what was described to them as a "scratch-and-win" answer sheet. This is a commercially marketed mastery learning response form (Van Valkenburgh, Nooger & Neville, 1961) on which respondents rub an opaque spot with their pencil eraser to expose a letter which tells them whether their choice is correct or incorrect.

RESULTS AND DISCUSSION

As expected, for all students, including those doing the *Standard Test*, the average score on Difficult questions was approximately 40%. More important, however, was the finding that students doing Difficult items first obtained a mean score of 85% on later Easy items, whereas students doing those same Easy questions in the first half of the test, and those tested in traditional fashion (Standard Test), averaged about 70%. This difference in scores on the Easy items was significant ($p < .01$), and

TABLE 1 Mean Test Scores as a Function of Order of Item Difficulty

Order of Item Difficulty	Mean Score (%)	
	Easy Items	Difficult Items
Easy-Difficult	71_a	38
Difficult-Easy	85_b	38
Standard	72_a	40

Note. Means with different subscripts differ significantly at $p < .01$, two-tailed.

lends support to the suggestion that an initial setback may have a salutary effect on subsequent performance. (The possibility that this effect might be mediated by anger is consistent with the finding by Levine and Burgess (1994) that angry participants showed better recall of narrative information than did sad or anxious individuals.)

It is also possible that the feedback had a biasing effect. Though the items were chosen to be discrete, the immediate feedback on the difficult items may have provided more valuable information for the subsequent easy items than no feedback or the feedback on the easy items. Thus immediate feedback on the difficult items might have improved performance on the easy items. Future studies should test for this "learning" effect.

These findings are intriguing, if only because they are counterintuitive. In keeping with professorial folklore, it had been expected that immediate knowledge of good results on initial Easy items would facilitate performance on later Difficult questions. Immediate feedback about poor performance on initial Difficult items could have had a deleterious effect on subsequent performance on Easy items. In fact, the opposite occurred.

It would be premature to recommend abandoning the traditional procedure of randomizing the order of presentation of items of varying levels of difficulty, or giving multiple-choice tests in their entirety. Yet it is noteworthy that Demaiter (1996) found support for the present findings in a "partial replication" (p. 4) using three different samples.

REFERENCES

Buckalew, L. W., Skinner, N. F., & Ross, S. (1990). Student- and instructor-held stereotypes about academic performance. *College Student Journal, 24*, 220-227.

Demaiter, J. L. (1996). *Does the order of questions affect one's performance?* Unpublished manuscript.

Lafitte, R. G., Jr. (1984). Effects of item order on achievement test scores and students' perception of test difficulty. *Teaching of Psychology, 11*, 212-214.

Levine, L. J., & Burgess, S. (1994, November). *Effects of specific emotions on memory for goal-related information in narratives.* Poster session presented at the annual meeting of the Psychonomic Society, St. Louis, MO.

Skinner, N. F. (1987, February). *If at first you don't succeed, try again but not again: The effects of immediate feedback and item difficulty on test performance.* Paper presented at the Second National Conference on Instructional Improvement and Evaluation Techniques, Tucson, AZ.

Van Valkenburgh, Nooger & Neville, Inc. (1961). *Trainer-tester.* [Self-scoring instant response answer sheet]. New York, NY: Author.

BEST COPY AVAILABLE

Behaviorism and Cognitivism in Learning Theory: Whatever Happened to Neobehaviorism?

R. Thomas Dudley
Tarleton State University

Undergraduate psychology students are rarely taught the neobehaviorist view of learning and memory. Typically, all forms of behaviorism are treated as the same and contrasted with a cognitive view. The false view of behaviorists (all forms) is that they are not interested in mental events, only external stimuli and responses. This black box view of all behaviorists must be overcome so that students can understand the importance of neobehaviorism to modern conceptions of learning and memory.

When dealing with the subject matter of learning, students are typically taught only two points of view: Cognitive and behavioral. The cognitive view typically refers to the study of mental processes involved in learning and memory. In other words, what happens internally as a result of learning. The word behaviorism is typically used to describe Skinner's form of behaviorism, which refers to the scientific study of external stimuli and responses.

The neobehavioral position is largely ignored. The neobehaviorist view refers to the scientific study of stimuli and responses, but is not limited to external stimuli and responses. This does not rule out the study of mental processes, as long as it can be done scientifically.

Ignoring neobehaviorism, or treating behaviorism and neobehaviorism as the same and comparing this general behaviorism to the cognitive approach, might give students the idea that behaviorism (in whatever form) can be largely tossed aside in favor of cognitive interpretations of learning and memory. Actually, behaviorism, that of Watson (1913) and Skinner (1950), was challenged by Hull's neobehaviorism (Hull, 1943, 1952) before the conception of the so-called cognitive revolution.

Students are usually taught that behaviorists were not interested in mental events, only external stimuli and responses. Again, neobehaviorism is often not mentioned. This leaves the student to assume either that there is only one form of behaviorism, or that all forms of behaviorism promote the same view.

Author info: Correspondence concerning this article should be sent to R. Thomas Dudley, Ph.D., Department of Psychology, Box T-0820, Tarleton State University, Stephenville, TX 76402

North American Journal of Psychology, 1999, Vol. 1, No. 1, 83-86.
©1999 NAJP Winter Garden, Florida

The neobehaviorists were, and still are, interested in internal mental events. However, they realized that these internal events must be studied scientifically. Though cast in terms of stimuli and responses, Clark Hull, with his r_G-s_G mechanism, provided an objective framework for studying mental events. For example, environmental stimulation produces a neuronal response (r, sensory impulse), which in turn causes a neural reaction (s, motor impulse), that produces an external response. Responses and stimuli were no longer seen as strictly external. Thus, the neobehaviorists paved the way for the scientific study of mental events currently regarded as the domain of cognitivists.

Teaching students early in their careers about the principles of neobehaviorism is becoming more and more important since the study of learning and memory has turned largely to explanations based on neural networks. As realized by Hintzman (1993), neural networks are a direct descendant of the neobehaviorists ideas. To teach behaviorism without distinguishing it from neobehaviorism is the equivalent of teaching phrenology without mentioning modern conceptions of personality.

The nondifferentiation of behaviorism and neobehaviorism can affect areas of psychology beyond learning theory. For example, many social psychologists claim that behaviorism can't account for many findings within their field. Cognitive dissonance experiments provide one such example. It is often said that behavioral theory (based on the principles of reinforcement) cannot provide an adequate explanation of the results. However, as pointed out by Lord (1992), if social psychologists would have paid attention to advances in learning theory, they would have realized that modern neobehaviorist theories could account for cognitive dissonance experiments. For example, theories such as the Daly Modification of the Rescorla-Wagner Model (DMOD; Daly & Daly, 1982), are able to account for the dissonance data. Thus, like psychology students, many professionals in psychology treat all forms of behaviorism as the same. Neobehaviorism seems to have been forgotten or dismissed.

Though some may claim that behaviorism is dead (and this is arguable), neobehaviorism is alive and well. In fact, some of the most influential modern theories of learning and memory are in the neobehaviorist tradition, such as the Rescorla-Wagner model (Rescorla & Wagner, 1972), frustration theory (Amsel, 1992), DMOD (Daly & Daly, 1982) and the Affective Extension of the Sometimes Opponent Process theory (AESOP; Wagner & Brandon, 1989).

More recently, Parallel Distributed Processing models (PDP; Rumelhart & McClelland, 1986) have received much attention. These models, as outlined by Hintzman (1993), are based on the same type of internal stimulus traces as Hull's theory. Probably the biggest difference is that Hull did not have the benefit of computer technology.

Neobehaviorism, as originally proposed by Hull, had its problems (e.g., Drive reduction). Its close attachment to, and confusion with behaviorism, may be one reason it is often discarded. However, over the years, neobehaviorism has been revised and has provided the groundwork for theories of learning and memory based on the architecture of the brain. Students should be taught these pitfalls and promises of neobehaviorism, instead of having all forms of behaviorism dismissed in favor of cognitive interpretations of learning.

REFERENCES

Amsel; A. (1992). *Frustration theory: An analysis of dispositional learning and memory*. Cambridge, UK: Cambridge University Press.

Daly, H.B., & Daly, J.T. (1982). A mathematical model of reward and aversive nonreward: Its application in over 30 appetitive learning situations. *Journal of Experimental Psychology: General, 111*, 441-480.

Hintzman (1993). Twenty-five years of learning and memory: was the cognitive revolution a mistake? In Meyer, D.E. & Kornblum, S. (eds.), *Attention and Performance XIV: Synergies in experimental psychology, artificial intelligence, and cognitive neuroscience--a silver jubilee* (pp. 359-391). Cambridge, MA: MIT Press.

Hull, C.L. (1943). *Principles of behavior*. New York: Appleton-Century-Crofts.

Hull, C.L. (1952). *A behavior system*. New Haven, CN: Yale University Press.

Lord, C.G. (1992). Was cognitive dissonance theory a mistake? *Psychological Inquiry, 3(4)*, 339-342.

Rescorla,R. & Wagner, A. (1972). A theory of Pavlovian conditioning: Variations in the effectiveness of reinforcement and non-reinforcement. In A.H. Black & W.F. Prokasy (eds.), *Classical Conditioning II*. New York: Appleton-Century-Crofts.

Rumelhart, D.E. & McClelland,J.L. (1986). *Parallel Distributed Processing: Explorations in the microstructure of cognition* (Vol.1). Cambridge,MA: MIT Press.

Skinner, B.F. (1950). Are theories of learning necessary? *Psychological Review, 57*, 193-216.

Wagner, A.R. & Brandon,S.E. (1989). Evolution of a structured connectionist model of Pavlovian conditioning (AESOP). In Klein,S.B., & Mowrer,R.R. (eds.), *Contemporary learning theories: Pavlovian conditioning and the status of traditional learning theory*. Hillsdale, NJ: Lawrence Erlbaum

Watson, J.B. (1913). Psychology as the behaviorist views it. *Psychological Review, 20*, 158-177.

On the Distinction between Behavioral Contagion, Conversion Conformity, and Compliance Conformity

Paul R. Nail
Southwestern Oklahoma State University

Whitney B. Helton
University of Oklahoma

Wheeler's (1966) analysis of the distinction between two types of social influence, behavioral contagion and conformity, is reviewed and extended to include two subtypes of conformity, conversion and compliance. We propose that contagion is influence that moves from internal (intrapersonal) conflict to internal harmony whereas compliance is influence that moves from internal harmony to conflict. Conversion begins with harmony, moves through conflict, and returns to harmony. It is desirable to reexamine the distinction between contagion and conformity in order to call attention to the need for a more adequate descriptive model of social influence.

The study of social influence is concerned with how people's perceptions, thoughts, feelings, and behaviors are affected by others (for reviews, see Cialdini & Trost, 1998; Levine & Russo, 1987). An issue fundamental to the study of social influence is the delineation of different types of influence phenomena (e.g., Allen, 1965; Crutchfield, 1962; Hogg & Turner, 1987; Jahoda, 1959; Levy & Nail, 1993; Nail, 1986; Nail & Van Leeuwen, 1993; Willis, 1965). One of the most interesting and important of these distinctions is that between behavioral contagion and conformity. According to Wheeler (1966; Wheeler, Deci, Reis, & Zuckerman, 1978), contagion and conformity are similar in that (a) both are characterized by movement on the part of influencee(s) toward the position of an external influence source and (b) both involve conflict. They are distinct, however, regarding the nature of the conflict and how it is managed.

Although we agree with Wheeler's (1966) analysis as far as it goes, we believe that the distinction between contagion and conformity is worthy of further consideration. The purpose of this article is to extend

---

Author info: Correspondence concerning this article should be sent to Paul R. Nail, Department of Psychology, Southwestern Oklahoma State University, Weatherford, OK 73096. Email: nailp@swosu.edu.

North American Journal of Psychology, 1999, Vol. 1, No. 1, 87-94
©1999 NAJP Winter Garden, Florida

Wheeler's analysis to include consideration of two recognized types of conformity, conversion and compliance.

Before beginning, it is important to note that Wheeler (1966) was deliberate in his use of the term "behavioral" in relation to contagion. Because of Le Bon's (1896) continuing influence, many social scientists through at least the 1960s associated contagion with the spread of an emotional climate. Wheeler, however, emphasized changes in overt behavior that need not be accompanied by the spread of emotion, hence the term behavioral contagion.

It is also important to note that contemporary theorists often distinguish between different types of contagion. For example, Wheeler et al. (1978) have distinguished between behavioral and hysterical contagion, and Levy and Nail (1993) have distinguished between disinhibitory, hysterical, and echo contagion.

Hysterical contagion refers to the influence of social factors on the spread of psychogenic illness (see also Colligan, Pennebaker, & Murphy, 1982; Kerckhoff & Back, 1968). Levy and Nail's (1993) disinhibitory contagion is essentially the same as Wheeler's behavioral contagion. Echo contagion occurs when a person imitates or repeats spontaneously the behavior or affect of another. Though theoretically important, hysterical and echo contagion are beyond the range of the present analysis. We use the term "contagion" herein to refer only to behavioral contagion.

WHEELER'S ANALYSIS OF BEHAVIORAL CONTAGION AND CONFORMITY

Consider the following example of behavioral contagion. Suppose that a man who is out of work is thinking about stealing a portable stereo from a music store display. He knows how to steal the stereo and is motivated to steal it, but does not, because of fear of the consequences. Later, however, the man observes others looting the store during a riot. They are taking many items and escaping, apparently without consequences. At this point, the man grabs the stereo and runs off with it.

Wheeler (1966) proposed that behavioral contagion can be conceptualized as follows. Initially the observer is in a state of internal (intrapersonal) conflict. The conflict arises because the individual's overt behavior is inconsistent with his or her private desires. In our example, the man did not take the stereo at first because he feared the practical consequences of such a theft. Internal conflict might also exist, of course, if one considers a behavior immoral or dishonorable.

At this point the individual observes another person or persons engaging in the behavior in question. If the others' behavior goes unpunished, then they have demonstrated that the situation is safe.

Moreover, when other people engage in a behavior, it suggests that they consider it to be appropriate or at least justifiable.

Having witnessed the model or initiator, the observer's internal restraints and conflicts are reduced. The observer then engages in the behavior, thus ending up in a state of internal harmony--the observer's overt behavior is now consistent with his or her private desires.

Another way of conceptualizing contagion is in terms of an approach-avoidance conflict (Wheeler, 1966). Initially the observer's avoidance tendencies are somewhat stronger than his or her approach tendencies. The behavior of others, however, reduces or disinhibits the strength of the avoidance tendencies, thus reducing the observer's conflict.

We emphasize that Wheeler was not suggesting that the observation of a model will always result in contagion. Rather, he proposed that contagion is most probable "when the avoidance tendencies are just slightly higher than the approach tendencies. If restraints are too great, observation of a model will not reduce them enough to change behavior; if restraints are too weak, the observer will express his [or her] impulse regardless of what the model does" (Wheeler et al., 1978, p. 53).

Even though the above example of contagion entails behavior that is socially undesirable, contagion can also occur with more positive behaviors. For example, at a party the music starts and a couple wants to dance. They do not start to dance initially, however, because they don't want to be the only couple dancing. At this point, another couple starts to dance, and those who were reluctant quickly follow.

Regarding conformity, following the zeitgeist of the 1960s, Wheeler (1966) cited as his prototype the influence that occurs in the classic Asch situation. Briefly, a research participant and a group of supposed peers are asked to make a series of simple perceptual judgments. The judgments entail publicly stating which of three comparison lines is closest in length to the standard line.

Everything is fine at first; the judgments are easy and everyone agrees. Beginning with the third trial, however, the group members (actually confederates of the experimenter) begin unanimously endorsing obviously incorrect judgments. The question is, will the lone, true participant conform to the majority by making the popular but objectively incorrect judgment, or will the participant remain independent? In the original study, Asch (1951) found that 32% of the responses of the experimental participants were in error in the direction of the majority. In contrast, control participants, who were not exposed to the group, made the same judgments with 99% accuracy.

Wheeler (1966) proposed that conformity can be conceptualized as follows. Initially the participant is in a state of harmony; the participant perceives the correct answer, for example, to be Line A, and the group vs "A." The participant is in harmony because he or she publicly and privately agrees with the group's judgment. Soon, however, the participant's harmony is disrupted when the group endorses a choice that is quite obviously incorrect. The participant perceives group pressure and is placed in a state of conflict (Back & Bogdonoff, 1964). The conflict is over giving the correct judgment or conforming by going along with the group, and it is up to the participant to deal with the conflict.

Considering contagion and conformity together, Wheeler's (1966) analysis reveals that the two are similar. In both cases, a person's behavior changes toward that of an external influence source. Contagion and conformity are also alike in that both involve conflict. They differ, however, in that with contagion the person starts out in a state of internal conflict, and influence from others resolves or reduces the conflict for the person. With conformity, in contrast, the person starts out in a state of harmony, and influence from others creates conflict that the person must deal with by him-or herself.

AN EXTENSION OF WHEELER'S ANALYSIS

We agree with Wheeler's analysis of conformity to the degree he carried it. That is, we agree that the individual's conflict is induced by the group and that it is up to the person to manage this conflict. However, Wheeler's focus was on developing a theory of contagion, and thus he did not consider the different ways that Asch's participants responded to the conflict. Stated differently, he did not consider different types of conformity.

Based on post-experimental interviews, Asch (1951, 1956) divided his conforming participants into different categories. At one extreme was the distortion of perception participants. Under the stress of group pressure, these participants were influenced to such an extent that they actually came to perceive the erroneous group judgments as correct! Thus, they resolved the conflict created by the group by changing how they viewed the lines. This type of conformity, that is, a change not only in one's public behavior but also in one's private perceptions or thoughts, is generally known as conversion conformity (cf. Berger & Luckmann, 1963; Festinger, 1953; Moscovici & Personnaz, 1980; Nail, 1986).

At the other extreme was the distortion of action participants. These participants reported that they knew the group's judgments were wrong but that they went along with them anyway. This type of conformity, a change in one's public behavior while private beliefs remain basically uninfluenced, is generally known as compliance conformity (Festinger, 1953; Nail, 1986).[1]

Wheeler's (1966) analysis, as extended to include the distinction between conversion conformity and compliance conformity, is summarized in Table 1. As the table indicates, with behavioral contagion the person starts out in a state of internal conflict and, through influence, arrives at a state of internal harmony. Interestingly, with compliance conformity it is just the reverse. Here the person starts out in a state of internal harmony and, through influence, arrives at a state of internal conflict. Compliance results in internal conflict because the person says one thing in public but believes something else in private.

Interestingly, conversion conformity has features in common with both contagion and compliance. Like compliance, with conversion the person starts out in a state of internal harmony and conflict is induced by others. Yet, conversion is also like contagion in that, through influence, the person changes and ends up in a state in internal harmony. Thus, to summarize, contagion moves from internal conflict to harmony, compliance moves from internal harmony to conflict, and conversion moves from internal harmony through conflict to internal harmony.

TABLE 1 Wheeler's (1966) analysis of behavioral contagion and conformity as amended to include the distinction between conversion and compliance

Behavioral Contagion	Conversion Conformity	Compliance Conformity
↓	↓	↓
Subject in state of Internal conflict	Subject in state of Internal harmony	Subject in state of internal harmony
↓	↓	↓
Subject observes Model or "initiator"	Subject is exposed to a Disagreeing influence source	Subject is exposed to a Disagreeing influence Source
↓	↓	↓
Model's behavior reduces subject's internal restraints and conflicts	Subject perceives Group pressure and experiences conflict over the perception of the stimulus	Subject perceives group Pressure and experiences conflict over conforming or being correct
↓	↓	↓
Subject engages in the model's behavior	Subject changes Perception and behavior toward source	Subject changes behavior Toward source
↓	↓	↓
Subject in state of Internal harmony	Subject in state of Internal harmony	Subject in state of internal conflict

Of course, Table 1 provides only what is analogous to a still picture of the three influence phenomena, whereas real social influence is more like the apparent continuity of a motion picture. This point is especially important with regard to compliance, given that compliance results in conflict between one's behavior and beliefs. Theory and research indicate that such conflict creates a state of psychological dissonance or imbalance that one is motivated to resolve (Festinger, 1957; Newcomb, 1953). The imbalance can be resolved by various means, for example, by (a) convincing the group to change its position, (b) converting privately to the group's position, or (c) withdrawing from the group, psychologically and/or physically.

CONCLUSION

The present analysis raises the issue of the relationship between contagion, conversion, and compliance, and other conceivable social influence phenomena. The social influence literature is replete with additional terms that refer to such phenomena, for example, anticompliance, anticonformity, identification, imitation, independence, and internalization. What are the similarities and differences between behavioral contagion, conversion, and compliance and these other processes? Are all of these terms necessary? Might most or all of these processes be included within a single, integrated model of social influence?

In fact, the desirability of an integrated social influence model has been recognized for some time. Allen (1965), Crutchfield (1962), Jahoda (1959), and Willis (1965) were among the early theorists to make progress in this direction. More recent progress is reflected in models proposed by Hogg and Turner (1987), Montgomery and Sarup (1992), Nail (1986), and Nail and Van Leeuwen (1993). The Hogg and Turner model, for example, integrates anticonformity, compliance, conversion, and independence all within a single, two-dimensional framework.

However, none of the existing models makes any mention of contagion. This is surprising, given the conceptual ties between contagion and conformity identified by Wheeler (1966) and the fact that most of the extant models do include conversion and compliance as types of conformity. Considering the theoretical and practical significance of contagion, it should not be overlooked in future models of social influence.[2]

REFERENCES

Allen, V. L. (1965). Situational factors in conformity. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 2, pp. 133-175). New York: Academic Press.

Asch, S. E. (1951). Effects of group pressure upon the modification and distortion of judgments. In H. Guetzkow (Ed.), *Groups, leadership, and men* (pp. 177-190). Pittsburgh, PA: Carnegie Press.

Asch, S. E. (1956). Studies of independence and conformity: I. A minority of one against a unanimous majority. *Psychological Monographs, 70* (9, Whole No. 416).

Back, K. W., & Bogdonoff, M. D. (1964). Plasma lipid responses to leadership, conformity, and deviation. In P. H. Leiderman & D. Shapiro (Eds.), *Psychobiological approaches to social behavior*. Stanford: Stanford University Press.

Berger, P. L., & Luckmann, T. (1967). *The social construction of reality: A treatise on the sociology of knowledge*. Garden City, NY: Anchor Books.

Cialdini, R. B., & Trost, M. R. (1998). Social influence: Social norms, conformity, and compliance. In D. Gilbert, S. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (4th ed., Vol. 2, pp. 151-192).

Colligan, M. J., Pennebaker, J. W., & Murphy, L. R. (Eds.). (1982). *Mass psychogenic illness: A social psychological analysis*. Hillsdale, NJ: Erlbaum.

Crutchfield, R. S. (1962). Conformity and creative thinking. In H. E. Gruber, G. Terrell, & M. Wertheimer (Eds.), *Contemporary approaches to creative thinking* (pp. 120-140). New York: Atherton.

Festinger, L. (1953). An analysis of compliant behavior. In M. Sherif & M. O. Wilson (Eds.), *Group relations at the crossroads* (pp. 232-256). New York: Harper.

Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford: Stanford University Press.

Hogg, M. A., & Turner, J. C. (1987). Social identity and conformity: A theory of referent information influence. In W. Doise & S. Moscovici (Eds.), *Current issues in European social psychology* (Vol. 2, pp. 139-182). Cambridge: Cambridge University Press, and Paris: Editions de la Maison des Sciences de l'Homme.

Jahoda, M. (1959). Conformity and independence. *Human Relations, 12*, 99-120.

Kerckhoff, A., & Back, K. (1968). *The June bug: A study of hysterical contagion*. New York: Appleton-Century-Crofts.

Le Bon, G. (1896). *The crowd: A study of the popular mind*. New York: Macmillan.

Levine, J. M., & Russo, E. M. (1987). Majority and minority influence. In C. Hendrick (Ed.), *Review of personality and social psychology, 8*, 13-54. Newbury Park, CA: Sage.

Levy, D. A., Collins, B. E., & Nail, P. R. (in press). A new model of interpersonal influence characteristics. *Journal of Social Behavior and Personality*.

Levy, D. A., & Nail, P. R. (1993). Contagion: A theoretical and empirical review and reconcepetualization. *Genetic, Social, and General Psychology Monographs, 119*, 233-284.

BEST COPY AVAILABLE

Montgomery, R. L., & Sarup, G. (1992). Social influence and conformity: A transorientational model. In D. Granberg & G. Sarup (Eds.), *Social judgment and intergroup relations: Essays in honor of Muzafer Sherif.* Springer-Verlag: New York.

Moscovici, S., & Personnaz, B. (1980). Studies in social influence. V. Minority influence and conversion behavior in a perceptual task. *Journal of Experimental Social Psychology, 16,* 270-282.

Nail, P. R. (1986). Toward an integration of some models and theories of social response. *Psychological Bulletin, 100,* 190-206.

Nail, P. R. & Van Leeuwen, M. D. (1993). An analysis and restructuring of the diamond model of social response. *Personality and Social Psychology Bulletin, 19,* 106-116.

Newcomb, T. M. (1953). An approach to the study of communicative acts. *Psychological Review, 60,* 393-404.

Wheeler, L. (1966). Toward a theory of behavioral contagion. *Psychological Review, 73,* 179-192.

Wheeler L., Deci, E. L., Reis, H. T., & Zuckerman, M. (1978). *Interpersonal influence* (2nd ed.). Boston: Allyn and Bacon.

Willis, R. H. (1965). Conformity, independence, and anticonformity. *Human Relations, 18,* 373-388.

Footnotes

[1] Intermediate to the distortion of perception and distortion of action participants regarding private change were the distortion of judgment participants. They still perceived the group's answer to be incorrect but given the group's consensus decided that it must in fact be their own perception that was faulty. With confidence in their perception eroded, they conformed because they wanted to be correct. To our knowledge, there is no specific label that corresponds to this type of conformity.

[2] Contagion is included in a recent social influence model proposed by Levy, Collins, and Nail (in press). This model, however, is different in kind from most previous social influence models. The Levy et al. model is concerned more with social influence paradigms such as conformity, obedience, social loafing, and social facilitation whereas classic models of social influence are concerned more with social influence responses such as conformity, independence, anticonformity, and anticompliance.

Promoting Altruism in Troubled Youth: Considerations and Suggestions

Joseph R. Canale
Marist College

Sonja R. Beckley
Marist College

This article offers a number of considerations and suggestions for implementing a program designed to increase altruistic behavior in troubled youngsters who are being treated in institutional or structured settings. These include: modeling, social reinforcement and prompting, attribution, and cooperative learning. Altruism is seen as an especially valuable therapeutic resource for these children who often display deficits in self-esteem, empathy and cooperation, problems that we believe altruism can help ameliorate. Examples of existing programs that attempt to increase altruistic and pro-social behavior are discussed.

A number of prominent therapists and clinicians have indicated the importance of altruism as a sign of adjustment or a means of enhancing one's self-esteem. Freud (1933) posited that a healthy individual was one who was capable of both working and loving. Adler (1939) placed a great importance on the development of a social interest and altruism in human beings and saw an individual with a highly developed interest in others not only doing something for the betterment of society, but doing something beneficial for one's self. Adler believed that one of the most effective ways of overcoming feelings of inferiority and promoting self-worth was to help others. Glasser (1965) also stressed the importance of involvement with and for others as a means of developing a sense of responsibility and a "success identity."

Altruism is also seen as one of the therapeutic factors in group psychotherapy. It gives clients, maybe for the first time, a meaningful opportunity to be of assistance to others, and, in the process, to derive considerable satisfaction and a sense of adequacy (Yalom, 1995). A specific example of this point is seen in a study by Otteson (1979), who

---

Authors' info: Correspondence concerning this article should be sent to Joseph Canale, Ed. D., Psychology Dept., Marist College, North Road, Poughkeepsie, NY, 12601

North American Journal of Psychology, 1999, Vol. 1, No. 1, 95-102.
©1999 NAJP Winter Garden, Florida

found that chronic patients who were in other- directed (altruistic) group therapy were discharged more quickly and rehospitalized less often than patients who were in self-oriented group therapy.

With children, Switzer, Simmons, Dew, Regalski, and Wang (1995) found that a school-based helper program improved self-esteem, depressive affect, and problem behavior relative to other groups in seventh grade boys. It was also suggested that these changes might lead to improved interpersonal relationships and attitudes about school.

In spite of the proposed and apparent positive effects of altruism, some believe that it is still underutilized as a therapeutic resource because of the strong influence of Self-Theory on the psychotherapeutic community (Canale, 1990; Vitz, 1979). This also seems to be the case in relation to treatment of disturbed youth, many of whom seem to suffer from deficits in conscience (Redl & Wineman, 1951), accurately assessing the perspectives of others (Chandler,1973), and moral reasoning (Jurkovic, 1980), characteristics that the altruistic behavior might be especially helpful in ameliorating (Switzer, et al., 1995).

The authors recently surveyed seventy-five youth treatment facilities (day treatment and residential) to investigate whether and in what ways they employed altruism in their treatment approach. A number who responded did indeed employ helping behaviors such as peer tutoring, community service, food drives, and neighborhood clean-ups. However, for the most part they did not do so in a programmatic manner. This also seems to be the case when reviewing the literature, which offers few examples of comprehensive programs designed to increase altruistic behavior in troubled youth.

A number of studies have suggested methods of increasing altruistic behavior in children. Macauley and Berkowitz (1970) found that models play an important role in self-sacrificing behaviors of children. They reported that observing altruistic acts by a model was much more effective in increasing sharing behavior in children than simply telling them that they should share more. Canale (1979) found that five- and six-year-olds were more likely to be generous with their possessions when they observed an adult model being generous than when they observed a non-generous model.

Gelfand, Hartmann, Cromer, Smith, and Page (1975) found that children who at first do not initiate a helping behavior will do so when prompted, then praised afterwards for their actions. Only a single prompt was generally required and was found to be more effective when given by an adult. Macaulay and Berkowitz (1970) also found praise to be facilitative in producing pro-social behavior, more so when the reinforcing statement was directed to the child *per se* as opposed to the helpful action ("You're such a nice person for helping" versus "That was a nice thing for you to do," respectively).

Attribution is another method that has been demonstrated to increase pro-social behavior. For example, when adults told children they were neat and tidy the children's littering behavior decreased (Miller, Brickman, & Bolen, 1975). Grusec and Redler (1980), found that making altruistic attributions about the child (e.g., "It seems like you really enjoy helping others" or "You're a very helpful person" or "That's the kind of thing someone does who wants to help others") increased sharing behavior in latency-age children.

The use of hypothetical scenarios in small groups was found to get students into an other-directed mind set (Bengtsson & Johnson, 1992). In this study a particular situation was read to a child and then he/she was asked to empathize with the main character. An example of one of the scenarios is as follows: "Your friend loves his dog, but now he is beginning to break out in a rash due to the dog's hairs. A doctor declares your friend to be allergic to dogs and says that they must sell the dog. If you were that boy how would you feel?" (Bengstsson & Johnson, 1992, p.14). Another way that they enabled children to think empathetically was to have them watch videos in which one child experienced distress due to the way other children are acting. They were then asked, after watching the video, to retell the story and make a reflective judgment about the episode.

Working as a team to achieve a goal, as in cooperative learning exercises, can be another method for promoting helpful behaviors. The Small Group Teaching Project (Eisenberg & Mussen, 1989) is a program designed to do just that. This program has been very effective in fostering helping behavior in children and is implemented in a classroom atmosphere. The class is divided into sub-units and operates as a peer society. Each sub-unit focuses on a specific dimension of the learning task and then they join together putting all the pieces together to understand the broad concept being introduced. Mutual help and support are given and much collaboration and exchange of ideas are expected of the children.

SUGGESTIONS AND CONSIDERATIONS

The intention of this article was to offer a number of ideas for developing an applied approach for increasing altruistic behaviors in maladjusted children and adolescents. Hopefully these ideas might be used or adapted to various settings involving these youngsters (e.g. day treatment programs, residential homes, special education classrooms).

Based on the above literature review, we would like to offer some practical suggestions and considerations for caregivers who would like to increase altruistic and pro-social behavior and attitudes in the children they serve:

I.) Personally model the altruistic behavior you hope to promote in the children you have targeted. For instance, when visiting the sick or elderly with children, adult chaperones should not only supervise the children but should be directly involved in the helping behavior they are trying to promote in their charges. If you ask a child to take a wheelchair bound individual for a stroll, you should be seen doing the same yourself. Just as a teacher who asks a student to tutor a classmate should engage in similar tutoring with another needy child in the presence of the class as a whole.

II.) Liberally employ social reinforcement and praise when children demonstrate helping behavior. Direct the praise to the child's person rather than the act or behavior.

III.) Use both casual and formalized prompting in order to initiate altruistic behavior in children. Most children will need prompting in this regard due to their egocentricity. This is especially true for troubled youngsters who are often inordinately self-centered and unskilled at helping others.

One obvious way of doing this is for a teacher, therapist, or caregiver to ask an individual to do something helpful for them or someone else. A more systematic way of prompting might include a "Help Needed Box" where youngsters, as well as the professional support staff, could leave written requests for help. Then, at regular intervals, it could be opened and volunteers sought (again from both staff and clients) to fulfill these requests.

A "Helping Chain" is another suggestion. Here children are randomly placed in a particular order where the first child is to fulfill the second child's request for help, the second prompted to help the third, and so on and so forth. This could be a weekly activity where the "links" of the "chain" randomly vary from week to week. Once again, we would recommend that caregivers be directly involved in this activity so that they become both a helping and helped "link" on a regular basis.

IV.) Make altruistic and pro-social attribution about the youngsters after they have demonstrated helping behavior.

This type of attribution, like praise for helping, is a readily available and "inexpensive" resource for caretakers and clinicians to employ. One format that might be especially suited for making altruistic attributions (as well as positively reinforcing comments) might be a weekly process group where children discuss their helping behaviors. During this group the adult facilitators can make direct attributions about the children's altruistic behaviors (e.g. "You were very generous to her"), and elicit them from other group members. For example, you might ask a child if he or she thinks "Johnny" is a helpful person because of what he did for him or her or for someone else. Or you might ask how youngsters feel when they are being helped by others ("How did you feel when Johnny helped you clean up your room?"), and how they perceived the helping person ("What did you think of Johnny when he helped you?"). This might not only reinforce helping attributions and behaviors but also might cultivate other-directiveness and empathy in youngsters deficient in these areas of social development.

V.) Consider the use of teamwork and cooperative learning to facilitate altruism. Promoting teamwork when doing helpful tasks might be a practical means of employing cooperative learning to increase altruism. For example, one could have youngsters form teams to rake elderly people's lawns where they themselves divide up the labor and tasks (raking, bagging, area covered, etc.) to ensure completion of the job. Here they are not only doing something helpful for another, but are also helping each other to complete the task.

PROGRAMS THAT HAVE BEEN IMPLEMENTED

In closing, we would like to highlight two programs that are designed to increase other-directed behavior in children. Both implement some of the considerations and suggestions described earlier.

Nancy Eisenbert (1992), in her book, *The Caring Child*, discusses a program titled the Child Development Project. This program was developed in order to encourage pro-social behaviors in school-aged children. The program focuses on dealing with such issues as the consideration of others' needs, along with balancing their own needs and desires with that of others. Activities that promote cooperative behavior, social understanding, pro-social values, helping others, and developing discipline are implemented in this program. Sensitivity and understanding others were promoted by using different discussions of events that occurred spontaneously in class. An example of this would be discussing the presence of conflicts between students that may occur throughout the day, or discussing visitors that are invited to the class from various organizations, occupations, or from different cultures. More formal activities include exposure to literature, films and books that provide clear examples of pro-social behavior. Children are also encouraged to engage in behaviors that are helpful such as doing classroom chores, helping other students, participating in tutoring, and engaging in community and school service activities. The children who have participated in this program demonstrated more altruistic behavior than students who were not engaged in this program.

Another program conducted at the Pathway School in Pennsylvania offers a model for increasing pro-social and helping behavior with an emotionally disturbed and special education population and also employs a number of the factors previously discussed in this article. The Pathway School's philosophy emphasizes the students' resources and what they have to offer others, and programmatically attempts to cultivate these. Pathway's service learning component emphasizes a teamwork approach which utilizes positive reinforcement, praise, instructional guidance, prompting, and staff modeling to motivate and maintain its students' attempts to help others. Also, activities that students engage in during their service learning experiences (e.g. providing Christmas and Easters parties for needy children, visiting disabled veterans at a V.A. hospital) are discussed and processed formally with the students after they have engaged in them. This is believed to promote a greater learning experience for the youngsters. The school believes its service programs have demonstrated an increase in social responsibility, self-esteem, and self-efficacy among its students while decreasing their isolation and disciplinary problems (O'Flannigan, 1996).

The authors strongly believe that altruism is a very valuable but underutilized therapeutic resource for helping troubled youngsters improve their self-esteem while becoming more sensitive and responsive to the needs of others. In offering these suggestions, guidelines and examples for promoting altruistic behavior, we hope that professionals working with these children in structured settings will be encouraged to implement them in some programmatic fashion, as well as to further explore their empirical efficacy through controlled research.

REFERENCES

Adler, A. (1939). *Social interest: A challenge to mankind.* New York, NY: Putnam.

Bengtsson, H. & Johnson, L. (1992). Perspective taking, empathy, and prosocial behavior in late childhood. *Child Study Journal, 22* (1), 11-22.

Canale, J.R. (1990). Altruism and forgiveness as therapeutic agents in psychotherapy. *Journal of Religion and Health, 29* (4), 297-301.

Chandler, M.J. (1973). Egocentrism and antisocial behavior: The assessment and training of social perspective-taking skills. *Developmental Psychology, 9*, 326-332.

Eisenberg, N. (1992). *The caring child.* Cambridge, Mass: Harvard University Press.

Eisenberg, N. & Mussen, P.H. (1989). *The roots of prosocial behavior in children.* New York, NY: Cambridge University Press.

Freud, S. (1964). *New introductory lectures on psychoanalysis.* In standard edition, vol. 22, London, England:Hogarth Press (First German Edition, 1933).

Gelfand, D.M., Hartmann, D.P., Cromer, C.C., Smith, C.L., & Page, B.C. (1975). The effects of instructional prompts and praise on children's donation rates. *Child Development, 46*, 980-983.

Glasser, W. (1965). *Reality therapy: A new approach to psychiatry*. New York, NY: Harper and Row.

Grimly, L.K., Zucker, K.B., Fakouri, M.E., and Thompson, M.W. (1991). Developing a prosocial orientation in children: A proactive prescription for perestroika. *School Psychology Review, 20* (3), 401-407.

Grusec, J.E. & Redler, E. (1980). Attribution, reinforcement, and altruism: A developmental analysis. *Developmental Psychology, 16* (5), 525-534.

Jurkovic, G.J. (1980). The juvenile delinquent as a moral philosopher: A structural-developmental perspective. *Psychological Bulletin, 88*, 709-727.

McCaulay, J. & Berkowitz, L. (1970). *Altruism and helping behavior: Some psychological studies of some antecedents and consequences*. New York, NY: Academic Press.

Miller, R.L., Brickman, P., & Bolen, D. (1975). Attribution versus persuasion as a means for modifying behavior. *Journal of Personality and Social Psychology, 31*, 430-441.

O'Flannigan, W.A. (1996). *The story of service at the Pathway School.* Unpublished doctoral dissertation, University of Pennsylvania.

Otteson, J. (1979). Curative caring: The use of buddy groups with chronic schizophrenics. *Journal of Consulting and Clinical Psychology, 47*, 649-651.

Redl, F. & Wineman, D. (1951). *Children who hate. The disorganization and breakdown of behavior controls*. New York, NY: Free Press.

Switzer, G.E., Simmons, R.G., Dew, M.A., Regalski, J.M., & Wang, C.H. (1995). The effect of school-based helper program on adolescent self-image, attitudes, and behavior. *Journal of Early Adolescence, 15* (4), 429-455.

Vitz, P. (1979). *Psychology as religion: The cult of self worship*. Grand Rapids, MI: Eerdmans.

Yalom, I.D. (1995). *The theory and practice of group psychotherapy*. New York, NY: Basic Books.

BEST COPY AVAILABLE

The Influence of Insecurity on Exchange and Communal Intimates

Ann Zak
Tracy Fancher
Mary Gillies
Eleanora Tornatore
Erin Waterhouse
College of Saint Rose

Individual differences in exchange and communal orientation have predicted satisfaction in romantic relationships, although the influence of insecurity on such intimates warrants examination. Communal- and exchange-oriented members of 70 heterosexual couples first learned that their relationships were insecure or received no information; then they completed a measure of satisfaction. The findings indicated that exchange-oriented persons were especially likely to experience relationship dissatisfaction when insecure than their communal-oriented counterparts.

Considerable evidence has accumulated on the exchange-communal dimension of interpersonal relationships (Clark, Helgeson, Mickelson & Pataki, 1994). Exchange-oriented individuals perform favors with the expectation of receiving comparable favors in return soon after (Buunk & VanYperen, 1991), whereas communal-oriented intimates focus on their partners' needs without future obligations to repay (Haslam & Fiske, 1992). Since short-term inequity often occurs in intimate relationships, exchange-oriented persons may find their relationships less fulfilling than their communal-oriented counterparts. Indeed, exchange orientation predicts relationship distress and dissatisfaction (Buunk & VanYperen, 1991; Sprecher, 1992; VanYperen & Buunk, 1991), and communal orientation predicts both satisfaction and trust in friendships and love relationships (Carlson-Jones & Vaughan, 1990; Zak, Gold, Ryckman & Lenney, 1998). Though inequity is expected to increase dissatisfaction among exchange-oriented persons (Murstein, Cerreto & MacDonald,

---

Authors' note: Parts of this paper were presented at the International Conference on Personal Relationships, June 1998.

Authors' info: Correspondence concerning this article should be sent to Ann Zak, Psychology Dept., College of Saint Rose, 432 Western Ave., Albany, NY 12203.

North American Journal of Psychology, Vol. 1, No. 1, 103-108.

©1999 NAJP Winter Garden, Florida

1977), researchers have yet to examine the effects of short-term imbalances on satisfaction among exchange- and communal-oriented partners.

Since exchange-oriented individuals need reassurance that their relationships are following fair exchange, they may feel particularly dissatisfied when they do not receive reassurance. Communal-oriented people, on the other hand, may view uncertainty as an opportunity for them to show that they trust their partners, leaving satisfaction intact. We hypothesized that exchange-oriented partners are particularly likely to experience dissatisfaction after a manipulation designed to induce insecurity than their communal-oriented counterparts.

METHOD

Seventy heterosexual couples were approached by pairs of experimenters and asked to participate in a short psychology study. Participants were recruited at several area parks and public places in the Northeast. No bona fide couples refused to participate in the study. Age of respondents ranged from 18 to 62 years (*M* = 28.8, *SD* = 10.8). 7.5% of the couples were dating their present partners and other(s), 45% were exclusively dating their present partners, 7.5% were engaged and 40% were married. Relationship length ranged from 1 to 41 years (*M* = 3.1, *SD* = 2.4). Each couple was tested individually and separated; one experimenter led the male and the other led the female to a chair or bench positioned far enough away so that the two partners could not interact.

All participants first completed the Relationship Orientation Scale (Zak, et.al, 1998), which assesses individual differences along an exchange-communal dimension. Examples of items from the Relationship Orientation Scale include "I usually remember if I owe my partner a favor or if he/she owes me a favor" (an exchange-oriented item), and "I would go out of my way to aid my partner, should the need arise, without expecting repayment" (a communal-oriented item; item scoring reversed). Participants also completed the Interests and Aspirations Scale (Zak, 1989), which measures their own and their partners' interests, goals and fantasies. An example of an item from the scale is "Which of the following best describes your (partner's) favorite fantasy? a) being stuck in an elevator with a favorite movie star b) winning the Nobel Prize c) joining a small utopian community in Vermont or d) joining a famous band that tours across the USA." The experimenters collected the surveys and both members of each couple were then randomly assigned to the insecurity or control condition. In the insecurity condition, intimates were told that their partners were unable to predict what their own interests and aspirations were, which may indicate that their relationships are uncertain and unstable, or, at the very least, that their partners do not "know them." Couples in the control condition were given no information about their partners' predictions. Couples then completed a nine-item version of the Dyadic Adjustment Scale (Spanier, 1976). They responded to the scale on a nine point continuum, ranging from strongly disagree (1) to strongly agree (9). Participants were fully debriefed and no one reported suspicion regarding the insecurity manipulation.

RESULTS AND DISCUSSION

The scales were reliable; coefficient alpha was .79 for the Relationship Orientation Scale, .87 for the Interests and Aspirations Scale, and .83 for the Dyadic Adjustment Scale. Consistent with previous research (Zak, et.al, 1998), a median split was conducted on participants' relationship orientation scores; they were classified as either exchange- or communal-oriented. Since relationship orientation was assessed after assignment of participants to conditions, it was not possible to assign equal numbers of exchange- and communal- oriented persons to the insecurity and control conditions.

TABLE 1 Total (SD) Satisfaction Scores Across Security Conditions

		Control	*Insecurity*
Communal-oriented	M	70.3 (n =32)	68.7 (n=31)
	SD	7.5	8.3
Exchange-oriented	M	67.8 (n =38)	61.9 (n=39)
	SD	8.2	8.7

A 2 (insecurity-control) x 2 (exchange-communal) analysis of variance was performed on total satisfaction (Dyadic Adjustment) scores. Since there were no sex or age differences, the data were collapsed across sex and age, which is consistent with previous studies (Zak, et. al, 1998). As predicted, the 2 (insecurity-control) x 2 (exchange-communal) interaction was significant, F (1, 139) = 4.9, $p < .05$. Both communal- and exchange-oriented individuals were less satisfied in the insecurity condition than in the control condition, but this difference was more pronounced for those who were exchange-oriented (Table 1). The main effects were also significant; insecure persons were less satisfied (M = 64.8, SD = 8.1) than those in the control condition (M = 69.7, SD = 7.6) were, F (1, 139) = 9.2, $p < .01$, and communal-oriented intimates were more satisfied (M = 69.2, SD = 9.0) than their exchange-oriented counterparts (M = 64.9, SD = 9.8), F (1, 139) = 6.9, $p < .01$.

Thus, the present study suggests that perceptions of short-term insecurity influence communal- and exchange-oriented intimates differently. Exchange-oriented people appeared more likely to be threatened by uncertainty; after receiving information indicating that their partners do not "know them," they may have assumed that unfair exchange exists and, therefore, experienced more distress than communal-oriented people. Communal-oriented persons, on the other hand, may view uncertainty as an opportunity to show support for their relationships and give their partners the benefit of the doubt, leading them to believe that their relationships are maintained. At first glance, it seems that exchange orientation may be the more logical approach toward relationships, for one reports satisfaction with the relationship only after weighing past partner evidence and testing the tit-for-tat balance of exchange. In other words, exchange-oriented persons will only report satisfaction if their relationships warrant it. However, exchange-oriented people may be paradoxically preventing what they wish for (satisfied relationships); since partners are likely to fail from time to time, these individuals are likely to lower their expectations and report less relationship quality. Future studies may explore this paradox among exchange-oriented intimates and how communal-oriented intimates appear to overcome it.

REFERENCES

Buunk, B. P. & VanYperen, N. W. (1991). Referential comparisons, relational comparisons, and exchange orientation: their relation to marital satisfaction. *Personality and Social Psychology Bulletin, 17*, 709-717.

Carlson-Jones, D. & Vaughan, K. (1990). Close friendships among senior adults. *Psychology and Aging, 5*, 451-457.

Clark, M.S., Helgeson, V. S., Mickelson, K. & Pataki, S. P. (1994). Some cognitive structures and processes relevant to relationship functioning. In R. S. Wyer and T. K. Srull's (Eds.) *Handbook of Social Cognition* (Vol. 2) (pp. 190-237). Hillsdale, NJ: Lawrence Erlbaum Associates.

Haslam, N. & Fiske, A. P. (1992). Implicit relationship prototypes: investigating five theories of cognitive organization of social relationships. *Journal of Experimental Social Psychology, 28*, 441-474.

Murstein, B. I., Cerreto, M. & MacDonald, M. C. (1977). A theory and investigation of the effects of exchange orientation on marriage and friendship. *Journal of Marriage and the Family, 20*, 543-548.

Spanier, G. B. (1976). Measuring dyadic adjustments: new scales for assessing the quality of marriage and similar dyads. *Journal of Marriage and the Family, 38*, 15-28.

Sprecher, S. (1992). How men and women expect to feel and behave in response to inequity in close relationships. *Social Psychology Quarterly, 55*, 57-69.

VanYperen, N. W. & Buunk, B. P. (1991). Equity theory and exchange and communal orientation from a cross-national perspective. *Journal of Social Psychology, 131*, 5-20.

Zak, A. M. (1989). *The interests and aspirations scale* Unpublished manuscript, The University of Maine.

Zak, A.M., Gold, J. A., Ryckman, R. M. & Lenney, E. (1998). Assessments of trust in intimate relationships and the self-perception process. *Journal of Social Psychology, 138*, 217-228.

BEST COPY AVAILABLE

Height as Power in Women

Aaron R. Boyson
Burt Pryor
Jeff Butler
The University of Central Florida

The purpose of this study was to examine relationships between female height and perceptions of power or dominance. While considerable research addresses the effects of height in males, research isolating female height as an independent variable is minimal. Perceptions of female height were gathered from one hundred eight students enrolled in undergraduate public speaking courses at a large Florida University. Participants completed a 14-item semantic differential scale to rate perceptions of a male or a female in a silhouetted drawing showing the man facing the woman. Three different drawings were used to manipulate female height, while male height remained constant. Participants rated a female who was pictured as noticeably shorter, slightly shorter, or slightly taller than the male silhouette. Albert Mehrabian's (1981) dominance scales, taken from his three dimensions of emotional meaning, were used to assess perceptions of dominance. The female was rated as significantly more dominant than the male when she was pictured as taller. Implications of this finding are discussed and future research is suggested.

Human height has long been associated with positive social characteristics such as power, prestige and attractiveness. For example, it is well publicized that this century's presidential elections typically have been won by the taller candidate, save Jimmy Carter in 1976. Conventionally held beliefs regarding physical appearance consistently point to height being more desirable in males. The expressions, "tall dark and handsome" and "bigger is better", which are consistently used in popular media point to the bias Western culture holds for tallness.

It has been written that the preference for height is one of society's "most blatant and forgiven prejudices" (Unger, 1977, p. 22). Feldman

---

Authors' info: Correspondence concerning this article should be sent to Dr. Burt Pryor, Ph. D., Nicholson School of Communication, University of Central Florida, Orlando, FL, 32816-1344.

North American Journal of Psychology, 1999, Vol. 1, No. 1, 109-114.
© 1999 NAJP Winter Garden, Florida

(1971, p. 1) also states: "American society is a society with a heightist premise: to be tall is to be good and to be short is to be stigmatized." Indeed a tall man's competitive behavior might be a short man's Napoleonic complex (Knapp & Hall, 1992).

An early review summarized 14 studies relating height with leadership, reporting that nine of them showed leaders were taller than average, two found the opposite, and three showed no difference (Stogdill, 1948). Wilson (1968) linked status with height in an academic setting, reporting a positive and linear correlation with increasing status. Farb (1978) concluded that men selected to advance in corporate management training programs were significantly taller than average (in Roberts & Herman, 1986). Kurtz (1969) asked 140 sales recruiters to choose between two equally qualified sales candidates, the only difference being the candidates height. Seventy-two percent of the respondents chose the taller candidate. In a more recent study (Montepare, 1995), taller participants were seen as more dominant and stronger. Given these and related studies there is support for the positive relationship between dominance and height in males.

No studies in literature reviews by Roberts and Herman (1986) and by Knapp and Hall (1992) cite research on characteristics associated with female tallness. Limited evidence of other characteristics related to dominance in women suggests that relationships between height and dominance may not be the same for men and women. For example, Berry (1991) found that women who have non-dominant appearances are also judged as more attractive. If so, how might height mitigate this and other relationships? Whether or not height is a significant predictor of perceptions of female dominance remains unknown. The purpose of this study is to examine this relationship by testing the following research question: Will height be associated with dominance in women?

Research using drawings of individuals has been conducted by Spiegel and Machotka (1974), who demonstrated numerous dominant-submissive relationships by varying posture-height factors. Their data indicated that slight differences in head direction or eye contact can affect perceptions of dominant-submissive relationships. This underscores the need to be cautious when using drawings of dyads to gather person perception data. In this study, care was taken to present mirrored depictions of male and female silhouettes.

METHOD

Participants

One hundred eight undergraduate students enrolled in basic speech classes at a large Florida university were randomly assigned to one of six groups. The respondents had an average age of about 20 years; about half of them were male.

Measures

A questionnaire was distributed consisting of fourteen semantic differential items. Each scale requested participants to rate silhouettes on a series of five-point scales. The silhouettes reflected a drawing of a man and a woman facing each other. Both the silhouettes were drawn to show business attire, mirrored posture, and identical hand, head and feet positions. The drawings of the woman were shrunk and enlarged in equal proportion on a photocopier to operationalize three different levels of female height. In only one condition, the tall condition, was the female taller than the male. The size of the male drawing remained constant.

Procedure

Upon receiving the instrument, participants were instructed (via accompanying directions on the questionnaire) to rate either the man or the woman in the picture by circling the number next to each trait that most closely related to the man or the woman in the picture. Mehrabian's (1981) dominance dimension of emotional meaning which includes six semantic differential items (controlling–controlled, influential–influenced, in control–cared for, important–awed, dominant–submissive, autonomous–guided) was used as the dependent measure. To reduce the demand characteristics, Mehrabian's (1981) positive/negative dimension, which was also comprised of six semantic items, as well as scales measuring extraversion and intelligence, were included. After completing the questionnaire, the students were asked to estimate the height (to the nearest half-inch) of the male and the female directly above the drawings on the questionnaire.

In summary, participants were asked to rate either the man or the woman in one of the three drawings on fourteen semantic differential scales. The experiment was designed to produce person perception ratings in a context depicting both a male and a female, a method not previously illustrated in the literature. The use of silhouettes controlled confounding variables such as attractiveness, facial expression and eye contact.

RESULTS

Manipulation checks of height variations indicated that participants perceived three distinct height levels for both the female (m=69.4, 66 and 64.2 inches tall) and the male (m=74.6, 72.4 and 67.5 inches tall) drawings. One way ANOVAs across the three levels, followed by Newman-Keuls analyses, showed that all contrasts differed significantly within gender.

To test the hypothesis, scores from the six dominance scales (Mehrabian, 1981) were summed to produce the overall ratings for dominance (Cronbach's alpha = .83).

TABLE 1 Perceived Height and Dominance

Paired Comparison (mean height in inches)		Dominance	
Female 69.4	Male 67.5	Female 13.00	Male 19.67
Female 66.0	Male 72.4	Female 16.71	Male 16.68
Female 64.2	Male 74.6	Female 16.72	Male 16.65

Note. Dominance means are the sum of six 5-point scales, with lower means representing higher ratings of dominance.

A one way ANOVA across the six rating conditions produced significance, F (5, 102) =3.96, $p < .01$. The Newman-Keuls post-hoc analysis of all possible contrasts yielded significance for one paired comparison. This difference occurred in the ratings of the drawing depicting the female as taller than the male. In this comparison, the female (M = 13.0) was rated more dominant than the male (M = 19.67). All other comparisons, within and between genders, produced non-significance, indicating that males, when portrayed as taller than females, were not rated more dominant.

DISCUSSION

The purpose of this investigation was to explore the relationship between female height and dominance. The data indicated a positive relationship when the depicted female was taller than the male. One curious finding was the male was not rated more dominant than the female in either comparison depicting the male as taller than the female. This finding seems to run counter to the previous research.

A possible reason for the apparent inconsistency may be our methodology. This is perhaps the only study to assess dominance perceptions using silhouetted drawings of a male and a female. It is important to highlight that Roberts & Herman (1986) summarized their empirical review by stressing the important distinction between actual height and perceived height in the literature, as it relates to significant findings.

This notion was offered in an earlier study by Prieto and Robbins (1975), who suggested that a person's perceived physical characteristics might actually be a more profound influence on self-evaluations than actual physical characteristics. Prieto and Robbins found a stronger correlation between a teacher's evaluation of height and self-esteem than the correlation between an individual's own self-evaluation of height and self-esteem. In addition, humans are prone to overestimating their own height (Dillon, 1962).

What Dillon's findings might suggest in light of the previous two studies is that generalizing the current findings to actual height in dyadic interactions might not be valid. Self-perception of height could alter a communication transaction differently than this experiment might suggest. But the reverse may be true, as Prieto and Robbins (1975) suggest, if a person communicates perceptions of another's height unknowingly. This potential paradox emphasizes the need for more research in this area. More sophisticated research designs gathering empirical data from actual interpersonal interactions would help shed light on the results obtained in this and other studies.

Limitations and Directions for Future Research

It is, of course, still possible that the findings here were mediated by variables related to perceptions of factors other than height. For example, one subject noted that she thought the drawing of the woman seemed more slouched than the man did. Also, this design does not take into account differences due to impressions made from body proportion, since participants were free to make perceptual judgements regarding weight. One way to further limit the potential effects of mediating variables is to replicate this research using diverse sample populations and different stimulus representations of female height. Consistent findings in this area might crystallize the evolution of even simple cultural adaptations, such as the desirability of higher-heeled shoes that some women seem to prefer. Future research might also attempt to explain the non-significant findings with respect to male height and dominance.

REFERENCES

Burgoon, J. K., Buller, D. B., & Woodall, W. G., (1996). *Nonverbal communication.* NY: McGraw-Hill.

Berry, D. S. (1991). Accuracy in social perception: contributions of facial and vocal information. *Journal of Personality and Social Psychology, 61,* 298-307.

Dillon, D. J. (1962). Measurement of perceived body size. *Perceptual and Motor Skills, 14,* 191-196.

Farb, B. (1978). *Humankind.* Boston: Houghton-Mifflin.

Knapp, M. L., & Hall, J. A. (1992). *Nonverbal communication in human interaction.* Orlando, FL: Holt, Reinhart, & Winston.

Kurts, D. L. (1969, December). Physical appearance and stature: Important variables in sales recruiting. *Personnel Journal,* 981-983.

Mehrabian, A. R. (1981). *Silent messages.* Belmont, CA: Wadsworth.

Montepare, J. M. (1995). The impact of variations in height on young children's impressions of men and women. *Journal of Nonverbal Behavior, 19,* 31-47.

Patzer, G. L. (1985). *The physical attractiveness phenomena.* New York, NY: Plenum Press.

Prieto, A. G., & Robbins, M. C. (1975). Perceptions of height and self-esteem. *Perceptual and Motor Skills, 40,* 395-398.

Roberts, J. V., & Herman, C. P. (1986). The psychology of height: An empirical review. In C. P. Herman, M. P. Zanna, & E. T. Higgins (Eds.), *Physical appearance, stigma, and social behavior: The Ontario symposium* (pp. 113- 140). Hillsdale, NJ: Erlbaum.

Speigel, J. & Machotka P. (1974). *Messages of the body.* New York: The Free Press.

Stogdill, R. (1948). Personal factors associated with leadership. *Journal of Psychology, 25,* 35-71.

Tisdale, S. (1994, June). A weight that women carry. *New Age Journal, 63-68*; 144-146.

Wilson, P. R. (1968). Perceptual distortion of height as a function of ascribed academic status. *Journal of Social Psychology, 10.* 97-102.

Moderator Effects of Managerial Activity Inhibition on the Relation Between Power versus Affiliation Motive Dominance and Economic Efficiency

Hallgeir Halvari
Geir Atle Lima
Oivind Aastorp
Buskerud College

We tested the hypothesis that the relationship between motivation and economic efficiency is moderated by a manager's activity inhibition. Activity inhibition among managers is defined as a tendency to delegate workplace responsibilities. Individual differences in power (mPow) versus affiliation motive (mAff) dominance were assessed using the Manager Motives Scale. Activity inhibition was assessed by the Manager Activity Inhibition Scale in 50 shopping center managers. Economic efficiency for the shopping centers was operationalized as: (i) development of market share over the last 2 years, (ii) development of economic efficiency per m^2 floor space hired out over the last 2 years, and (iii) subjective evaluation of economic efficiency in relation to competing shopping centers. Hierarchical multiple regression/correlational analyses showed that the power versus the affiliation motive dominance and activity inhibition interacted significantly in prediction of all three indicators of efficiency. The effect size was large for the development of the market share. The pattern of these interactions indicates that managers with power motive dominance (mPow > mAff) contribute positively to economic efficiency the *higher* their activity inhibition is. Conversely, managers with affiliation motive dominance (mAff ≥ mPow) contribute positively to efficiency the *lower* their activity inhibition is.

Authors' info: Correspondence concerning this article should be sent to Hallgeir Halvari, Buskerud College, Bredalveien 14, N-3500 Honefoss, Norway.

North American Journal of Psychology, 1999, Vol. 1, No. 1, 115-134.
©1999 NAJP Winter Garden, Florida

Studies of motivational determinants of managerial efficiency emphasize the importance of the power, affiliation and achievement motives (Boyatzis, 1982; McClelland & Boyatzis, 1982; McClelland & Burnham, 1976). According to McClelland (1995) the power and the affiliative motive are defined as a recurrent need to have an impact on people and the need to be with others, respectively. The achievement motive is directed toward doing something better. These motives are theorized to energize, orient, and select behavior (McClelland, 1995). In studies of managerial efficiency, individuals with a stronger power motive than affiliation motive (mPow>mAff) and who are high in activity inhibition have received particular attention. This motivational constellation is called the "socialized power motive" or the "leadership motive pattern." The concept of activity inhibition is used to distinguish between a personified or a socialized power motive. In the present study, managerial activity inhibition is defined as a tendency not to do themselves the tasks they become personally involved in at work, or a delegating style. Activity inhibition may also be conceived as a tendency which guides the person to set aside selfish goals in order to concentrate more on group or organizational goals and activities (Boyatzis, 1982; McClelland & Steele, 1972). McClelland and Burnham (1976) emphasizes that individuals with a personalized power motive (mPow>mAff and low activity inhibition) assert their power in an impulsive way in order to satisfy selfish needs. Thus, an important dimension of activity inhibition is impulse-control (McClelland, 1975; 1995; McClelland & Steele, 1972).

Individuals with high impulse-control should first evaluate the advantages and disadvantages for the organization, and act accordingly, before they behave according to their own wishes and needs (Boyatzis, 1982). Recent research by Spangler and House (1991) indicates that activity inhibition (McClelland, Davis, Kalin & Wanner, 1972) is conceived as a style of channeling power into use and action, organizational versus personalistic. Further, the power motive itself is shown to be related to the concern of the impact by strong and assertive action (Fodor & Riordan, 1995), and organizational versus personalistic goal outlets at work may represent high versus low control of power impulses, respectively. Another element in the activity inhibition concept is attentional control (McClelland, 1995). In an organizational setting this means prioritizing tasks or being more selective in choosing tasks and information (McClelland, 1995). Attentional control is related to the intrinsic motivational control of behavior and is supposed to influence the relationship between motivation and action. A third characteristic of activity inhibition is thought to be related to the ability to initiate and persist in goal-oriented behavior for the organization, despite strong personal motivational tendencies.

Research indicates that highly intrinsically motivated individuals use strategies of self-regulation to inhibit competing tendencies of action and to inhibit subsequent unpleasant affects. (Sokolowski, 1994). Managers with a socialized power motive (McClelland, 1975) also take the initiative to start work (McClelland, 1995). In addition, they spend time on important tasks for the organization (i.e., attentional control), and avoid the temptation to get too involved with personal goals at work (i.e., impulse-control).

The above discussion of activity inhibition and its relation to impulse- and attentional-control, and initiative, may also be related to the volitional functions described in Kuhl's (1994a) theory of action versus state orientation. These constructs are thought to influence the relationship between intention and action (Kuhl, 1994a).

In general, research indicates that individual differences in the power motive or the leadership motive pattern play a significant positive role for U.S. presidential performances (Spangler & House, 1991; Winter, 1987), for long-term success in top level general management (Jacobs & McClelland, 1994; McClelland & Boyatzis, 1982), in choice and attainment of power-relevant careers over time (Jenkins, 1994), and in relative profit growth of large industrial firms (Chusmir & Azevedo, 1992). Research also shows that sales managers with a socialized power motive are rated higher by subordinates on organizational clarity and team spirit than managers with a personalized power motive (Boyatzis, 1982; McClelland & Burnham, 1976). These higher morale scores were also significantly associated with increased sales. Research (McClelland, 1975) also indicates that people with the leadership motive pattern have characteristics thought to make them good managers (i.e., respect for institutional authority, discipline and self-control, caring for others and concern for just reward). Conversely, research indicates that individuals with a high affiliation motive tend not to succeed in top level management. For example, individuals with high affiliation motive scores were not promoted as often to higher levels of management (McClelland & Boyatzis, 1982). In addition, presidential performance was negatively correlated with the affiliation motive (Spangler & House, 1991). Thus, it would seem that a leadership motive pattern would benefit top level management in large companies and organizations.

However, exceptions to these general results are found among managerial integrators and employee relations managers (McClelland & Burnham, 1976), among middle-level management among first-line supervisors in a professional service industry organization (Cornelius & Lane, 1984), and among professional hospital middle-level managers (Tjosvold, 1989). The objective of managerial integrators is to get management and labor to work together, and the objective of first-line supervisors is to help others. Effective integrators score higher on the affiliation motive than ineffective integrators (Lawrence & Lorsch, 1967; Litwin & Siebrecht, 1967), and the affiliation motive scores of first-line supervisors were positively related to performance and subordinate attitude (Cornelius & Lane, 1984). According to McClelland (1995), a managerial integrator should enjoy being with people and should spend time trying to help others resolve their differences. The same arguments may hold for first-line supervisors in their efforts to support and help colleagues and customers with technical solutions. These characteristics are consistent with the theoretical definition of the affiliation motive and should be expected of persons with high affiliation motive scores. However, more typically, management jobs require competition, the ability to influence others and the capacity to make decisions that may hurt people's feelings. These actions might be difficult for individuals with a high affiliation motive, since they are primarily interested in being friendly and popular, and trying to avoid or resolve conflicts.

Regarding the achievement motive, research indicates that this motive is not critical for top level managerial success (McClelland & Boyatzis, 1982) or presidential performance (Spangler & House, 1991). Although the achievement motive among chief executive officers in large industrial firms was positively associated with the relative growth in sales it was unrelated to the relative growth in profits (Chusmir & Azevedo, 1992). In addition, the achievement motive did not predict success among middle-level executives in a study by Bhandari and Tayal (1990). In a longitudinal study by McClelland and Franz (1992) sources of achievement experiences in childhood were associated with adult achievement motive scores and earned income, but not with work accomplishment. Exceptions to these results have emerged for the management of a small number of people and in the management of knowledge organizations. The achievement motive was positively related to promotions in a large firm only for managers who did not manage large number of people and who made individual contributions on their own (McClelland & Boyatzis, 1982), but their promotions stopped at lower levels of management. Further, the achievement motive scores of heads are shown to be positively correlated to economic efficiency and performance of small business entrepreneurs (Kock, 1965; McClelland, 1961). Achievement scores are also positively associated with success in small professional knowledge entrepreneurial organizations, i.e., research and development in pharmaceuticals, chemistry, engineering and higher education (Sedge, 1985; Stahl, 1983; Varga, 1975; Wainer & Rubin, 1969). These types of organizations are different in size and function than the shopping centers in the present study. Thus, no relation between the achievement motive and economic efficiency was expected.

Economic Efficiency in Shopping Centers

The term "shopping center" is often defined differently (Casazza, 1985; Hadler, 1974; HSH, 1992; Kleiven, 1987). According to the Trade Union of Commerce and Services in Norway (HSH, 1992) it is defined as a planned and coordinated common location of shops which represent different trades conducted by different firms. In this study, the shopping center has a potential floor space of at least 5000 square meters for at least 15 different shops, has a common planned and coordinated marketing and has been conducted by the same center manager over the last two years. The center manager is responsible for internal and external activities. A main objective of the manager is to hire out the floor space available to potential leasers. It is important for the manager to create a mix of tenants who represent different types of shops from different trades. In this way, the hiring out of floor space is related to the internal economic profits for the center owner(s). However, a good internal combination or profile of shops is also connected to the external efficiency, e.g., the total sales outcome of the center in relation to the market. Thus, a good internal profile may be a basis for good external marketing. A second main objective of the manager is to coordinate and integrate different interests leading to common activities for the center, so that different shops can cooperate in their approach to market communication, marketing, planning and fulfilling of activities. These activities should be related to the total sales outcome for the shopping center and rental profits for the center owner(s) (Kummen, 1991).

The internal and external efficiency of shopping centers is not always strongly correlated (Lindefelt, 1991). Efficiency is a broad concept, and in order to cope with it in empirical research it is proposed to include different indicators (Yukl, 1989). Indicators of external efficiency should express something about the survival ability of the organization, and the rise or fall of market share is a measure often used (Boyatzis, 1982). An indicator of the internal efficiency of shopping centers is floor space productivity, i.e., total sales relative to the floor space hired out. In this study, it was required that center managers have an opportunity to influence the rise or fall of these indicators. Thus, the following relative measures of development of economic efficiency were included: (i) development of market share over the two last years, (ii) development of floor space productivity over the last two years, and (iii) managers' subjective evaluation of their economic efficiency compared to competing shopping centers.

Implications for the Present Study

Based on a literature review, management of shopping centers requires paradoxical abilities. The manager should integrate common marketing activities in cooperation with different shops, possess a competitive attitude, let different tenants compete for their own positions, use power to influence tenants in order to fulfill the will of the owners, and sometimes make unpopular decisions. Thus, different managerial profiles may be functional. On the one hand, research shows (Chusmir & Azevedo, 1992; Jacobs & McClelland, 1994; Jenkins, 1994; McClelland & Boyatzis, 1982; Spangler & House, 1991) that efficiency of managerial tasks which require competition, use of impact and unpopular decisions are facilitated by a combination of a stronger power than the affiliation motive and a high activity inhibition. Conversely, managerial integration of common interests is shown to be facilitated by high affiliation motive scores (Cornelius & Lane, 1984; Lawrence & Lorsch, 1967; Litwin & Siebrecht, 1967; McClelland & Burnham, 1976). For a manager with high affiliation motive scores it is believed to be nonfunctional to channel motivation through a delegating style. According to the construct validity of the affiliation motive it should be directed toward the goal state of being with others (McClelland, 1995). Thus, a delegating style (i.e., high activity inhibition) may prevent them from achieving this goal. Instead, being actively involved in and doing activities themselves (i.e., a low activity inhibition) may be perceived as a personal investment that instrumentally brings the manager closer to the goals of being with tenants and being perceived as friendly and popular. Thus, in such a situation personal involvement may be functional. This reasoning is related to research showing that managers with a high affiliation motive have cooperators who respond with significantly more action than cooperators of a power-dominant manager (Fodor & Smith, 1982). Further, in accordance with the definition of activity inhibition in the present study, a low score on activity inhibition is characterized by personal involvement in tasks and an interest of doing them oneself. Thus, whether this tendency is good or bad for the organization may depend on its match or mismatch in relation to the importance of tasks done for the organization. If the match is good an affiliation dominant manager may be successful.

The above reasoning can be summarized in a model combining classic achievement motivation theory (Atkinson & Birch, 1970, 1978; Raynor, 1974) and the recent Theory of Uncertainty Orientation (Sorrentino, Hodson, Roney, and Walker, 1998, in press). The resultant performance tendency (T_p) should be a function of motivation ($mPow - mAff$) multiplied by the cognitive-situational component, i.e., activity inhibition ($AI_d - AI_{ds}$), where AI_d reflects a delegating style and AI_{ds} the involving "doing self" style, multiplied by the perceived importance of tasks done in relation to the goals of the organization (*PI*). This yields the following formula: $T_p = (mPow - mAff)(AI_d - AI_{ds})(PI)$. Holding PI constant, the model implies that when the delegating style (e.g., = 3) is stronger than the involving «doing self» style (e.g., = 1) AI should match the concern of power-dominant managers (e.g., mPow = 3 and mAff = 1) about the goal state of *influencing others*, result in positive motivation and lead to an approach resultant tendency to perform, i.e., (3 -1) (3-1) = 4. Conversely, the same cognitive-situational orientation will according to the model mismatch the concern of affiliation-dominant managers (e.g., mPow = 1 and mAff = 3) about the goal state of *being with others*, result in negative motivation and lead to an avoidance resultant tendency to perform, i.e., (1 - 3) (3-1) = - 4. Diametrically opposed tendencies can be derived for the opposite cognitive-situational orientation, i.e., an involving «doing self» style. This style may bring managers in close relationships to subordinates, and consequently match and mismatch, respectively, the recurrent concern of affiliation- and power-dominant managers.

In summary, the first hypothesis tested is that the relation between the power motive relative to the affiliation motive and economic efficiency is moderated by managerial activity inhibition. Finally, in order to control the validity of the interpretation of the function of activity inhibition as related to different styles of channeling power versus affiliation motive dominance, the following two additional hypotheses were tested: (ii) The lower the activity inhibition is, or the greater extent to which managers are doing tasks themselves, the higher is the perceived importance of specific job-tasks in relation to the organizational goals. (iii) The higher the activity inhibition is, the more managers delegate task responsibility to subordinates.

METHOD

Participants

Participants in this study included managers from 50 shopping centers located in Oslo, Norway, and in the 5 counties surrounding Oslo. Each shopping center had been managed by the same person for at least the two previous years.

Assessment of Motives

The center managers were tested individually by using resultant measures (e.g., mPow -mAff) to infer motivation. According to Sorrentino (et al., 1998), the utility of a resultant measure has been demonstrated for affiliation-related motives (Short & Sorrentino, 1986; Sorrentino & Sheppard, 1977), and is strongly suggested for power motives (Veroff & Veroff, 1972). The power, affiliation and achievement motives were measured using the Manager Motives Scale

(Andersen, 1991). This scale consists of 8 power, 8 affiliative and 8 achievement motive items. Each power item is paired with each affiliative and achievement motive item. The respondent chooses one of the two statements that suit him best. Two example item pairings for the power and the affiliative motive are: Item 1, affiliative motive part of item pair: "I am concerned about creating a friendly and thoughtful atmosphere at work," versus power part of item pair: "It is my responsibility as a manager to give advice, help and support to my subordinates even if they do not ask for it." Item 2, affiliative motive part of item pair: "It is important for me to be liked by subordinates and to be a popular manager," versus power part of item pair: "It is important for me that it is myself, and not my subordinates and specialists, who make the decisions in my organization." Two example item pairings for the power and the achievement motive are: Item 1, power motive part of item pair: "I need to be the person who makes the decisions and carries out activities in my organization," versus achievement motive part of item pair: "It happens that I spend time contemplating my career or how I can do things better at work." Item 2, power motive part of item pair: "It is important for me that it is myself, and not my subordinates and specialists, who make the decisions in my organization," versus achievement motive part of item pair: «I normally set achieveable goals and take moderate calculated risks." Two sample item pairings for the affiliative and achievement motives are: Item 1, affiliative motive part of item pair: "I wish to work so that my subordinates can perceive me as a good friend," versus achievement motive part of item pair: "I try recurrently to do things better at work." Item 2, affiliative motive part of item pair: "I am mostly satisfied in work situations which give me an opportunity to be in contact with other people," versus achievement motive part of item pair: "I want to achieve something important in general beyond my daily tasks at work."

For the power motive, 8 items were paired with 8 affiliative and 8 achievement motive items, and the power motive score could vary from 0 to 16. The same variation in scores was possible for the affiliative items relative to the power and achievement motive items, and for the achievement motive items relative to the power and affiliation motive items.

Managers were individually tested on activity inhibition. "The following items have no correct or wrong answers. They may suit you more or less. Before you answer them, please relate the content of each item to the work you do as a manager:" (i), "When I am working with a task which interests me, I become personally involved for a long time," (ii). "When I become personally involved with an important task for the shopping center, I do the task myself," and (iii), "If there are interesting and exciting tasks to be fulfilled, I do it myself». The

BEST COPY AVAILABLE

item formulations were based on some modifications of items 3B and 6B from the Action Control Scale (ACS) developed by Kuhl (1994b). The items were responded to on a 4-point scale ranging from "suits me not at all" (value 4) to "suits me very well" (value 1). The Mean was 5.36, and Skewness was -0.90. The Cronbach alpha was .69. Higher scores on the Manager Activity Inhibition Scale indicate high activity inhibition.

Assessment of Job-Task Importance

Managers responded to the following question with different sub-items for marketing, economy and hiring out floor space: "How important do you perceive the following job-tasks to be in relation to the goals of the shopping center?" For marketing the sub-items were: 1a) "Strategic market planning;" 1b) "choice of business concept;" 1c) "center profiling (shop mix, service)." For economy the sub-items were: 2a) "Budgeting of sales;" 2b) "budgeting of costs;" 2c) "control of sales and reporting." For hiring out floor space the sub-items were: 3a) "Negotiating with tenants;" 3b) "choice of tenants." The items were responded to on a 5-point scale ranging from "less important" (value 1) to "very important" (value 5). The items were designed in the study as single (i.e., not a scale construction) due to an intention to reduce the number of items and the time required for the managers. Further, the general managers wanted to keep these items as specific as possible in order to receive some applied feedback about these items and their relation to other concepts under study (e.g., activity inhibition). The mean values of these items varied between 2.60 and 3.62, and the skewness values were all higher than -1.0 and lower than 1.0.

Assessment of Delegating Style

Managers responded to the following main question: "Give an estimate of the proportion of the following tasks you have the responsibility for and do yourself, and the proportion of the tasks you delegate to others. For each type of task the proportion for 'doing yourself' and 'others do' should sum to 100%." Responses were given for a) "marketing tasks," b) "economy tasks" and tasks related to c) "hiring out of floor space." The responses for "% of tasks doing yourself" and "% of tasks others do" were identical but inversely related for each type of task. Therefore, only the proportion of tasks managers did themselves were used. A high score indicated a low delegating style while a low score indicated a high delegating style. Mean and skewness values were for "marketing tasks" 64% and -.68, respectively. For "economy tasks" they were 49% and .18, respectively, and for tasks related to "hiring out of floor space" 68% and -.57, respectively.

Assessment of Manager Education and Experience

Managers responded to the following questions: 1) "In what subject do you have your main education? a) Marketing. b) Economy. c) Both marketing and economy." 2a) "How many years have you been working as a manager on a level lower than today?" 2b) "How many years have you been working as a manager on the same level as today?" Regarding education, 43% answered marketing, 21% economy and 36% both marketing and economy. The mean values for manager experience was for the lower level 4.18 years (skewness =1.46), and for the same level it was 5.80 years (skewness = 0.88).

Assessment of Economic Efficiency

The indicator of "development of market share" was estimated by the units of the total sales of the shopping center in 1994 and 1995. It was related to the national statistics of total sale development for the region by this formula: Development of market share = (Total sale for the center in 1995 / total sale for the center in 1994) - (total sale for the region in 1995 / total sale for the region in 1994). Thus, the relative score for the development of the market share for each shopping center was given in relation to market development. The mean score was 14.69, and the skewness was 0.13.

The indicator of "development of floor space productivity" was estimated by the following formula: (total sale for the center in 1995 / floor space in 1995) - (total sale for the center in 1994 / floor space in 1994). The relative score for development of floor space productivity is given in Norwegian Kroner / square meter floor space. The mean score was 1125, and the skewness was 0.89.

"Subjective evaluation of economic efficiency" was measured by responses to the following four questions: (i) "Related to the competitors in your district, how do you estimate the profits or capital yield for your shopping center?" (ii) "Related to the competitors in your district, how do you estimate the increase in total sale for your shopping center?" (iii) "Related to the competitors in your district, how do you estimate the development of the market share for your shopping center?" (iv) "Related to the competitors in your district, how do you estimate the degree of success for your shopping center?" Responses on a 7-point scale ranged from "very bad" (value 0) to "very good" (value 6). Total scores could vary from 0 to 28. The mean score was 16.72, and the skewness was -0.57. Cronbach's alpha was .89 for the 4 items. The four items were formulated based on the indicator for efficiency used by Pearce, Robbins and Robinson (1987).

Treatment of the Data

Bivariate relationships between the variables under study were treated by Pearson r's. In studies of moderator effects on relationships between personality and behavior, hierarchical multiple regression/correlational (MRC-) analysis were proposed (Chaplin, 1991; Cohen & Cohen, 1983). The choice is based on different considerations. The procedure has the capacity to handle a combination of categorical and continuous variables. In this study, the moderator variable, i.e., activity inhibition was continuous, and the power motive relative to the affiliation motive score is categorical ($mPow \leq mAff$ was dummy coded as 0, and $mPow > mAff$ is dummy coded as 1). Due to the possibility of combining both continuous and categorical variables in the same multivariate analysis, the potential loss of statistical power by using bivariate subgroup analysis can be prevented (see Cohen & Cohen, 1983, p.183).

The dependent economic efficiency measures were respectively hierarchically regressed onto: (step 1) the affiliation motive relative to the power motive (PA), (step 2) PA + activity inhibition (AI), (step 3) PA + AI + PA X AI. By entering a new variable on each step, the increase in $\underline{R}^2$ on each step is evaluated in terms of statistical significance of the $\underline{F}$ -test. The formula used is: $\underline{F} = [\underline{R}_{diff}^2(\underline{N}-\underline{k}-1)]/[1-\underline{R}^2]$ (see Cohen & Cohen, 1983, p.107). At step 3 it is the partialed cross-product of the power motive relative to the affiliation motive and activity inhibition that carries the possibility of a moderator effect (Chaplin, 1991). The predicted values of the significant double interactions were computed. This was done by following the formula for estimating regression lines proposed by West, Aikin and Krull (1996, pp. 35-36).

RESULTS

For the power motive descriptive statistics were M=7.98 and Skewness = 0.88. For the affiliative motive scores, descriptive statistics were M=5.42, and Skewness = .35. The mean and skewness scores for the achievement motive were 10.60 and -0.52. Due to the fact that there were 8 items for each motive the sum of the mean values was 24. The reliability coefficients (Kuder-Richardson 20) were .61 for the power motive items, .63 for the achievement motive items and .60 for affiliative motive items. For more details on the reliability and validity of the Manager Motives Scale, see Andersen (1991).

Pearson correlations between variables (see Table 1) showed no significant relationship between motives and indications of economic efficiency. However, the motives were significantly negatively associated, whereas the efficiency measures were significantly positively correlated.

TABLE 1 Pearson Correlations between the Achievement Motive, the Power Motive, the Affiliation Motive, Activity Inhibition and Different Indications of Economic Efficiency (N = 50)

Measure	1	2	3	4	5	6	7
1. The achievement motive							
2. The power motive	-.62***						
3. The affiliation motive	-.50***	-.37**					
4. Activity inhibition	.03	.15	-.20				
5. Develop. of market share	.02	.07	-.10	.14			
6. Develop. of floor space prod.	.20	-.07	-.15	.02	.50***		
7. Subj. eval. of econ. efficiency	-.10	.20	-.10	.02	.34*	.36*	

*$p < .05$, ** $p < .01$, *** $p < .001$, two-tailed tests.

TABLE 2 Hierarchial Regression of Indicators of Economic Efficiency as a Function of the Power Motive relative to the Affiliation Motive, Activity Inhibition and the Cross-products of Motives and Activity Inhibition

Variable Entered	Total Multiple R	R^2	Increment In R^2	F for Increment
Development of Market Share				
Power relative to Aff. (PA)	.09	.01	.01	0.49
Activity Inhibition (AI)	.16	.03	.02	0.98
PA x AI	.49	.24	.21	13.26***
Development of Econ. Efficiency Relative to Floor Space Hired Out				
Power relative to Aff. (PA)	.03	.00	.00	0.00
Activity Inhibition (AI)	.03	.00	.00	0.00
PA x AI	.33	.11	.11	5.81*
Subjective Evaluation of Economic Efficiency				
Power relative to Aff. (PA)	.14	.02	.02	0.98
Activity Inhibition (AI)	.14	.02	.00	0.00
PA x AI	.33	.11	.09	4.65*

Note. *sr* = semipartial correlation. *$p<.05$, ***$p<.001$.

The regression of economic efficiency parameters as a function of the power relative to the affiliation motive, activity inhibition, and the cross products is given in Table 2. For all dependent measures, the increment in $\underline{R}^2$ associated with the interaction of the power relative to the affiliation motive X activity inhibition is statistically significant (see the formula and procedure used in the method section). The interaction of motivation X activity inhibition on the development of the market share is not only significant but also has a large effect (see Table 2). All three interactional results mean that the higher the activity inhibition scores are among managers with a stronger power than affiliation motive, the more efficiently they influence the economy of the shopping center. Conversely, activity inhibition is negatively related to efficiency among managers with a stronger affiliation than the power motive. That is, the lower the activity inhibition scores, the better they function in relation to center economy. The results supported the hypothesis that the relationship between the power motive and affiliation motive and economic efficiency is moderated by activity inhibition.

TABLE 3 Pearson Correlations between the Perceived Importance of Job-tasks, Activity Inhibition, the Power Motive, the Affiliation Motive, and the Achievement Motive ($N = 50$)

Tasks	Activity Inhibition	Power motive	Aff motive	Ach Motive
Marketing				
Strategic market planning	-.24	-.33*	.07	.25
Choice of business concept	-.38**	-.18	-.11	.26
Center profiling (shopmix, service)	-.36**	-.13	-.03	.14
Economic				
Budgeting of sales	-.28*	-.12	.37**	-.20
Budgeting of costs	-.03	.21	.16	-.33*
Control of sales and reporting	-.17	-.11	.34*	-.18
Hiring out floor space				
Negotiating with tenants	-.28*	.15	-.20	.03
Choice of tenants	-.15	-.21	.00	.20

* $p < .05$, ** $p < .01$

Additional hierarchical regression/correlational analyses of economic efficiency were carried out for the other combinations of activity inhibition and motives (i.e., the power relative to the achievement motive; the achievement relative to the affiliation motive). They were all nonsignificant.

Additional results show that activity inhibition is significantly negatively correlated with the perceived importance of 4 of the 8 job-tasks emerging in Table 3. A low score on activity inhibition, i.e., involvement in activities and doing them oneself, correspond with a high perceived importance of in particular tasks related to relatively outgoing activities directly tied to market, sale and tasks which require close relationships to tenants and customers. The results give partial support to hypothesis 2. Further, high activity inhibition corresponds with doing less marketing and economy tasks oneself and delegating more to subordinates (see Table 4). These results give partial support to hypothesis 3. Furthermore, regarding tasks related to hiring out of floor space, managers with a high power motive delegate them to others, whereas managers with high affiliation do them themselves. Another result seen in Table 4 is the significant negative correlation between activity inhibition and managerial experience at the same level as they function today. A high experience corresponds with a low activity inhibition.

TABLE 4 Pearson Correlations between the Proportion of total Tasks under Manager Responsibility they do Themselves Relative to Delegating to Subordinates (Doing Tasks Themselves: doing self = high values; delegating to others = low values), Higher Education, Manager Experience, and the Scores of Activity Inhibition and Motives (N = 50)

Variables	Activity inhibition	Power Motive	Aff Motive	Ach Motive
Doing tasks themselves (high values)				
Vs. delegating to others (low)	-.38**	-.09	.16	-.05
Marketing tasks	-.31*	.09	.05	-.12
Economy tasks	-.16	-.34**	.29*	.13
Hiring out of floor space				
Higher Education				
Marketing	-.29*	-.14	-.13	.23
Economy	.06	-.05	-.07	.10
Marketing and Economy	.19	.17	.18	-.31*
Manager Experience				
Years at lower level as today	.05	.01	.03	-.04
Years at same level as today	-.45***	.04	.01	-.05

* $p < .05$, ** $p < .01$, *** $p < .001$, two-tailed.

DISCUSSION

The results suggest that managers high in either affiliation or power motives may function well in economically managing a shopping center. They also indicate that activity inhibition is related to different *managerial styles* of channeling power versus affiliation motive dominance. Managers with power motive dominance contribute positively to economic efficiency if they delegate tasks responsibility.

This result coincides with the theoretical basis of this study, and Winter's (1973) characterization of the power-motivated person as one who has power if he has the capacity to influence others. Additional results indicate that this is the case, i.e., a high activity inhibition is related to a delegating managerial style. This does not mean that power-dominant managers should be inactive, but they ought to channel their actions through other persons or subordinates. In this way, the results can also be interpreted in light of the findings of Fodor and Riordan (1995), who emphasized that assertive action that produces intense emotions in others is positively correlated to the power motive. Thus, managerial power-dominance may be compared to a two-edged sword—good or bad, dependent on how power is channeled and perceived by subordinates, tenants and customers. The research by Fodor and Riordan (1995) also suggests that if the actions of managers with a high power motive are hindered or they are in a situation of group conflict they receive significantly lower leader behavior ratings than managers with a low power motive. Other research indicates that managers who score high on the power motive have subordinates who contribute with less information and less action proposals (Fodor & Smith, 1982), report lower self-affect (Fodor & Riordan, 1995), and lower enthusiasm (Chattopadhyay, 1983) than subordinates of managers who scored low on the power motive. These characteristics of the power-dominant manager is negative and should not be confused with the "positive power face," i.e., the socialized power motive or the leadership motive pattern that includes a high activity inhibition (Boyatzis, 1982; McClelland & Burnham, 1976). In this way, power dominance alone seems insufficient for positive managerial outcomes to occur.

Succesful managers with a strong power motive seem to be dependent on a high activity inhibition or action directed through others toward the goals of the organization or community. In addition, emphasis should be given toward the "nots," i.e., goals not to be approached (Spangler & House, 1991). Furthermore, research indicates that managers with high power motive scores function more efficiently in their work if subordinates are ingratiating (Fodor & Farrow, 1979). This may indicate that in order to succeed, the personality of a power-dominant manager with a delegating style (i.e., high activity inhibition) should be perceived as legitimate and accepted by subordinates. This may be the case in the study by Spangler and House (1991), who reported a positive correlation between the power motive and the performance of U.S. presidents. Presidents are elected and their power should be accepted in general. However, if the power motive of managers is stressed by group and goal conflict (Fodor & Riordan, 1995) their work may be facilitated by a strong and offensive action toward others which may instigate their impact. Thus, if they succeed, their power motive is positively stressed and should influence both organizational results and personal health positively (Fodor, 1985; Jemmott, Hellman, McClelland & Locke, 1990).

The results also suggested that managers with affiliation motive dominance are more efficient when they do the job-tasks themselves. This observation is thought to be related to their concern for being popular, being with others, to actively cooperate and to go along together with tenants and subordinates. Doing appropriate tasks of value for the tenants may be perceived by the affiliation-dominant manager as an investment related to good ratings of behavior and popularity (McClelland, 1995). This may lead to an increase in the probability for the manager to be with tenants, cooperate actively with them—and this should be the goal among affiliation-motivated managers (Cornelius & Lane, 1984; McClelland, 1995; McClelland & Burnham, 1976). The results indicate that this is the case. The efficient affiliation-dominant manager does *not* primarily use a delegating style. That is, a delegating style may be a mismatch in relation to a strong affiliation motive, and may prevent one from activities directly related to working with other people. Further, in order to be effective the affiliation-dominant manager with a low activity inhibition does not necessarily need to possess assertiveness because research shows that their workers respond with significantly more action than is the case among workers with a power-dominant manager (Fodor & Smith, 1982). A low power motive is thought to be critical in this motive pattern, which also includes a high affiliation motive and low activity inhibition. Research shows that managers who score low on the power motive receive more factual information (Fodor & Smith, 1982), and are rated more positively (Fodor & Riordan, 1995) than managers with a strong power motive. Furthermore, other research indicates that cooperative, in contrast to competitive, interdependence contributes to productivity among managers and employees in a service organization. More precisely, cooperative interaction resulted in the efficient completion of a task, improved productivity, and confidence that future collaboration would be successful (Tjosvold, 1989). Future research should determine if this result pattern is also valid for individuals with a stronger affiliation than power motive, and who are low in activity inhibition.

Finally, it should be emphasized that the results fits nicely with the model described in the introduction: $T_p = (mPow - mAff)\ (AI_d - AI_{ds})\ (PI)$. Holding PI constant, the model does also fit the third step in the hierarchical multiple regression analysis recommended to test moderator effects or cross-products of such variables (Chaplin, 1991; Cohen & Cohen, 1983). Further, the negative correlations between activity inhibition and perceived importance of job-tasks (PI, see Table 3) may in particular add to the high efficiency of affiliation-dominant managers who at the same time are low in activity inhibition. Their involving orientation toward tasks connected to the goals of the organization and their wish to do these tasks themselves (low activity inhibition) is matched with a high perceived importance of job-tasks, and may explain the efficiency scores for the affiliation-oriented managers. However, the single-item measures of perceived importance of different tasks were not predicted to enter the model described above. In the present study reliability estimates cannot be computed for these single items. This prevents them from being tested in the model, and future research should try to consider such measures in a more appropriate way.

REFERENCES

Andersen, J. A. (1991). *Leders motivasjon – teori og instrument.*: Lund Universitetet i Lund.

Atkinson, J. W. & Birch, D. (1970). *The dynamics of action.* New York: Wiley.

Atkinson, J. W. & Birch, D. (1978). *An introduction to motivation.* New York: Van Nostrand.

Bhandari, A. & Tayal, R. (1990). Executive success in relation to personality and motivational patterns. *Social Science International, 6,* 28-34.

Boyatzis, R. E. (1982). *The competent manager.* NY: John Wiley & Sons.

Casazza, J. A. (1985). *Shopping center development handbook.* Washington D. C.: Urban Land Institute.

Chaplin, W.F. (1991). The next generation of moderator research in personality psychology. *Journal of Personality, 59,* 143-178.

Chattopadhyay, G. P. (1983). Motivation and leadership styles in Indian enterprises. *Managerial Psychology, 4,* 29-42.

Chusmir, L.H. & Azevedo, A. (1992). Motivation needs of sampled Fortune-500 CEOs: Relations to organizational outcomes. *Perceptual and Motor Skills, 75,* 595-612.

Cohen, J. & Cohen, P. (1983). *Applied multiple regression correlational analysis for the behavioral sciences.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Cornelius, E. T. & Lane, F. B. (1984). The power motive and managerial success in a professionally oriented service industry organization. *Journal of Applied Psychology, 69,* 32-39.

Fodor, E. M. (1985). The power motive, group conflict, and physiological arousal. *Journal of Personality and Social Psychology, 49,* 1408-1415.

Fodor, E. M. & Farrow, D. L. (1979). The power motive as an influence on use of power. *Journal of Personality and Social Psychology, 37,* 2091-2097.

Fodor, E. M. & Riordan, J. M. (1995). Leader power motive and group conflict as influences on leader behavior and group member self-affect. *Journal of Research in Personality, 29*, 418-431.

Fodor, E. M. & Smith, T. (1982). The power motive as an influence on group decision making. *Journal of Personality and Social Psychology, 42*, 178-185.

Hadler, Å. (1974). *En studie av norske butikksentra.* Oslo: Fondet for markeds-og distribusjonsforskning.

HSH (1992). *Kjopesentra og byutvikling.* Oslo: Handels-og Servicenæringens Hovedorganisasjon.

Jacobs, R. L. & McClelland, D. C. (1994). Moving up the corporate ladder: A longitudinal study of the leadership motive pattern and managerial success in women and men. *Consulting Psychology Journal Practice and Research, 46*, 32-41.

Jemmott, J. B., Hellman, C, McClelland, D. C., & Locke, S. E. (1990). Motivational syndromes associated with natural killer cell activity. *Journal of Behavioral Medicine, 13*, 53-73.

Jenkins, S. R. (1994). Need for power and women's careers over 14 years: Structural power, job satisfaction, and motive change. *Journal of Personality and Social Psychology, 66*, 155-165.

Kleiven, P. (1987). *Kjopesentra - utvikling. Praktisk markedsforing.* Oslo: Cappelen.

Kock, S. W. (1965). *Management and motivation.* Helsinki: Doctoral dissertation presented at the Swedish School of Economics.

Kuhl, J. (1994a). A theory of action and state orientations. In J. Kuhl, & J. Beckmann (Eds.), *Volition and personality: action versus state orientation* (pp. 9-46). Seattle, WA: Hogrefe & Huber.

Kuhl, J. (1994b). Action versus state orientation: Psychometric properties of the Action Control Scale (ACS-90).In J. Kuhl, & J. Beckmann (Eds.), *Volition and personality: action versus state orientation* (pp. 47-59). Seattle, WA: Hogrefe & Huber.

Kummen, G. (1991). Profesjonell forvaltning en avgjørende konkurransefaktor. *Markedsrevy, 9*, 34-35.

Lawrence, P. R. & Lorsch, J. W. (1967). *Organization and environment.* Boston: Harvard Graduate School of Business.

Lindefelt, L. (1991). *Om organisasjonsstruktur for effektivitet.* Umeå: Umeå Universitet.

Litwin, G. H. & Siebrecht, A. (1967). *Integrators and entrepreneurs: Their motivation and effect on management.* St. Louis: Hospital Progress.

McClelland, D. C. (1961). *The achieving society.* Princeton, NJ: Van Nostrand.

McClelland, D. C. (1975). *Power: The inner experience.* NY: Irvington Publishers.

McClelland, D. C. (1995). *Human motivation.* Cambridge: Cambridge University Press.

McClelland, D. C., Davis, W. B., Kalin, R., & Wanner, E. (1972). *The drinking man: Alcohol and human motivation.* New York: Free Press.

BEST COPY AVAILABLE

McClelland, D. C. & Boyatzis, R. E. (1982). Leadership motive pattern and long-term success in management. *Journal of Applied Psychology, 67*, 737-743.

McClelland, D. C. & Burnham, D. H. (1976). Power is the great motivator. *Harvard Business Review, 54*, 100 -110.

McClelland, D. C. & Franz, C. E. (1992). Motivational and other sources of work accomplishments in mid-life: A longitudinal study. *Journal of Personality, 60*, 679-707.

McClelland, D. C. & Steele, R. S. (1972). *Motivation workshops.* Morristown: General Learning Press.

Pearce, J. A., Robbins, D. K. & Robinson Jr., R. B. (1987). The impact of grand strategy and planning formality on financial performance. *Strategic Management Journal, 8*, 125-134.

Raynor, J. O. (1974). Future orientation in the study of achievement motivation. In J. W. Atkinson & J. O.Raynor (Eds.) *Motivation and achievement* (pp. 121-154). Washington, DC: Winston & Sons.

Sedge, S. K. (1985). A comparison of engineers pursuing alternate career paths. *Journal of Vocational Behavior, 27*, 56-70.

Short, J. C. & Sorrentino, R.M. (1986). Achievement, affiliation, and group incentives: A test of the overmotivation hypothesis. *Motivation and Emotion, 10*, 115-131.

Sokolowski, K. (1994). The role of action and state orientation in affiliative situations. In J. Kuhl, & J. Beckmann (Eds.), *Volition and personality: action versus state orientation* (pp. 417-425). Seattle, WA: Hogrefe & Huber.

Sorrentino, R. M., Hodson, G., Roney, C. J. R., & Walker, M. (1998). *A theory of uncertainty orientation: Informational and affective influences on the dynamics of action.* Unpublished manuscript.

Sorrentino, R. M. & Sheppard, B. H. (1978). Effects of affiliation-related motives on swimmers in individual versus group competition: a field experiment. *Journal of Personality and Social Psychology, 36*, 704-714.

Spangler, W. D. & House, R. J. (1991). Presidential effectiveness and the leadership motive profile. *Journal of Personality and Social Psychology, 60*, 439-455.

Stahl, M. J. (1983). Achievement, power and managerial motivation: Selecting managerial talent with the job choice exercise. *Personnel Psychology, 36*, 775-789.

Tjosvold, D. (1989). Interdependence and power between managers and employees: A study of the leader relationship. *Journal of Management, 15*, 49-62.

Varga, K. (1975). nAchievement, nPower and effectiveness of research and development. *Human Relations, 28*, 571-590.

Veroff, J. & Veroff, J. B. (1972) Reconsideration of the measure of power motivation. *Psychological Bulletin, 78*, 279-291.

Wainer, H. A. & Rubin, I. M. (1969). Motivation of research and development entrepreneurs. *Journal of Applied Psychology, 53*, 178-184.

West, S. G., Aikin, L. S., & Krull, J. L. (1996). Experimental personality designs: analyzing categorical by continuous variable interactions. *Journal of Personality, 64*, 1-48.

Winter, D. G. (1973). *The power motive*. New York: Free Press.

Winter, D. G. (1987). Leader appeal, leader performance, and the motive profiles of leaders and followers: A study of American presidents and elections. *Journal of Personality and Social Psychology, 52*, 196-202.

Yukl, G. A. (1989). *Leadership in organizations*. Englewood Cliffs, NJ: Prentice Hall.

BEST COPY AVAILABLE

The Downsizing Experience and Gender: Similarities and Differences

Theresa Kline
The University of Calgary

Sheldon Goldenberg
The University of Calgary

This is an exploratory study intended to characterize the "downsizing experience" of men and women. We conducted semi-structured interviews with 97 male and 47 female, mostly white-collar, displaced workers in a western Canadian city. Results pertaining to their experiences prior, during and after the lay-off are discussed in terms of initial and long-term affective and behavioral responses. The present work situations of respondents were also examined. The results suggest that men and women faced with the loss of a job tend to respond in similar ways, though gender-related differences in organizational position make a difference in their experiences. There is also reason to believe that differences for men and women in the opportunity structure of the larger labour market affects both their perceptions and subsequent careers.

Downsizing, also known by a variety of terms such as "right-sizing" and "de-hiring," is clearly part of the current organizational landscape. For example, in the last two years, U.S. firms have announced the permanent reduction of more than 1.5 million employees (Hain, 1993), and Canada lost 109,000 jobs between January and July of 1992 (Welsh, 1992). Between 1987 and 1992, 6 million layoffs occurred in the United States; 615,000 in 1993 and 516,000 in 1994 (Cascio, 1995).

Whatever its motivation or label, we wanted to examine its effects on those who have lost their jobs as a result. Accordingly, we chose to investigate how mostly white-collar, recently downsized Canadian men and women have dealt with this experience. The paucity of literature and agreed upon theoretical models of the downsizing experience makes studying this phenomenon, and the differences between men and women with regard to it, difficult from a purely deductive perspective. Thus, the approach taken was an exploratory one.

Kozlowski, Chao, Smith, and Hedlund (1993) summarized the limited research about those who have lost their jobs through

---

Authors' info: Correspondence concerning this article should be sent to Theresa Kline, Ph. D., U. of Calgary, Calgary, Alberta, Canada T2N 1N4.

North American Journal of Psychology, 1999, Vol. 1, No. 1, 135-156.
© 1999 NAJP Winter Garden, Florida

downsizing. They note that much of this research has focused on blue-collar workers, as opposed to white-collar employees. Several authors have noted further that much of the knowledge about unemployment in general is based on work carried out during the Great Depression, and that it is not relevant to the present-day context (e.g., Hartley & Fryer, 1984; Hedlund & Smith, 1993). Finally, Leana and Feldman (1994) have noted that the empirical research on the differences between men and women's responses to job loss is very limited and has not produced any definitive results.

There have been relatively few attempts to examine gender-specific effects of the downsizing experience. In general, the literature on the psychological effects is mixed, with some authors claiming existence of gender differences and some not. Where differences are found there is often little attempt to determine if these are spurious and due to position differences, or if they are truly gender differences that would hold even after controlling for position in organizational job structure.

Snyder and Nowak (1984) examined aspects of financial stress and demoralization of primarily blue-collar, female displaced employees, and concluded that the females experienced more financial stress than did males. Perrucci, Perrucci, Targ and Targ (1988) found that blue-collar male and female laid-off workers generally did not differ in their experiences. Leana and Feldman (1991) found no differences between men and women professional, technical and clerical workers in their psychological and behavioural distress after subsequent job loss, but did find that men tended to use problem-focused coping strategies, whereas women tended to use symptom-focused strategies. Subsequently, Leana and Feldman (1994) concluded that there seem to be very few differences between men and women in their psychological response to job loss. Shamir (1985) found that employment status had more of an impact on men's psychological well-being than on women's, primarily due to the financial implications of unemployment. Muller, Hicks, and Winocur (1993) examined the psychological well-being of male and female employed and unemployed clerical workers, finding differences between all four groups (i.e., gender by employment status).

There is also a more amorphous literature on gender differences as experienced within the organizational context of the workplace. This research generally addresses gender stratification in the work place wherein, for example, reference is made to the "glass ceiling" that limits the possibilities of advancement for women. It is here as well that we find the broader literature on alleged gender-based differences in management, decision-making and interpersonal styles as these contribute to organizational morale and productivity (cf. Struthers, 1995).

This literature, however, does not resolve whether gender differences are controlled by structural differences in the location and responsibilities of men and women, or whether gender differences overpower these structural variables. Donnell and Hall (1980) compared 1,916 male and female managers on a number of behavioral dimensions, and made a convincing case of "no significant differences." They conclude that "...the way management is practiced is not related to the sex of the manager - the issue is not gender-bound" (p. 76). In his study of 595 business students, Palmer (1983) found that in a simulated managerial decision-making situation, men and women made more similar than dissimilar decisions. Powell, Posner and Schmidt (1984) studied 130 male and female managers' value systems and found that the similarities of the value systems outweighed the differences. They conclude that there is "...little support to the accuracy of views of male and female managers which are based on sex-role stereotypes." (p. 919). A meta-analysis (Eagly & Johnson, 1990) reports that the stereotypic expectation that men and women lead in different ways (men tend to be task-oriented and women tend to be interpersonally oriented) only held true in laboratory settings, and not in organizational settings.

The organizational commitment literature also, on balance, seems to argue against finding many true gender differences in the downsizing experience (e.g., Aven, et al., 1993; Koberg & Chusmir, 1989). Kanter (1977, p. 199), for example, suggests that gender differences are more apparent than real, and that the true variable is power or location in the opportunity structure. On the other hand, other research has argued convincingly that women in managerial positions may indeed manage in a more "people and interactive" style than the traditional "command and control" (Rosener, 1990) "image and autonomy" styles (Statham,1987). What seems to be clear from these studies is that the "positional" context may be at least as important in determining the behaviour and effect of the individuals who occupy this role as gender. The relationship between gender and behaviour might even be spurious, in which case if position were held constant gender differences would disappear. Thus, in our study, where position is relatively uniform, we expected the experiences of men and women to be more similar than different. Still, because relatively little research has been done in this area, and because the category of white-collar worker is both broad and ambiguous[1], the present study was exploratory. It is consistent with Jahoda's (1988) claim that studies in this area ought to be descriptive in nature due to the continued absence of a strong theoretical framework.

Our study allowed us to report how men and women (primarily white-collar) dealt with the loss of position that occurred when they were displaced and became unemployed, both across and within similar job contexts in many industries. We asked about several aspects of the downsizing experience, going beyond mental health and financial outcomes. These included organizational experiences prior to being laid off, the lay-off experience itself, initial and long-term affective and behavioural responses, and their present work situation. This is not so much a study of the impact of downsizing as it is an exploration of the perceptions, attitudes and behaviours' of men and women on issues surrounding downsizing.

METHOD

Respondents

Our 144 respondents consisted of white-collar workers who had been laid off within the last four years in a large western Canadian city. The 97 males and 47 females we spoke with were a non-probability snowball sample with multiple points of entry to the population of recently displaced workers. We solicited respondents through an article appearing in the local paper (*N* = 61) that described our study and included a telephone number to contact the researchers. Meetings with local job networking groups (*N* = 19), and with local outplacement firms (*N* = 34) also yielded participants as did referrals by others we had already interviewed (*N* = 30). While we would not confidently generalize from this data base, we think it nonetheless legitimate to make internal comparisons among various categories of the sample. The interviews took place between November 1992 and April 1993.

Questionnaire and Procedure

We used a semi-structured interview format where participants were encouraged to speak for themselves, sharing their experience of downsizing. Responses from twenty initial exploratory, open-ended interviews with recently laid-off white-collar individuals were used to generate a final schedule of interview questions.

This schedule included several questions in either forced choice or Likert-type formats. These questions were usually followed by a probe for explanation or elaboration. Other questions simply were open-ended (e.g., "What do you think are your strongest selling points in terms of employment?"). Pre-test interviews with the provisional schedule were conducted by a team of eleven trained interviewers, including the primary researchers. The training sessions were conducted to ensure that all interviewers had a common frame of reference. Additionally, the type of responses interviewees provided in the pre-tests was examined and revisions were made to the final instrument. We also came to consensus on the types of responses that would require more in-depth probing, and the degree to which clarification was desired. While we did not collect any reliability data, these training sessions took several hours and all the interviewers were involved in all stages.

As indicated, the pre-test interviews were not used in the final analyses, but were used to refine the original instrument. The final instrument (available from the researchers) contained 92 items and covered several major topic areas including: demographic information, job history/training/formal education, their history with and downsizing experience in the last organization they had worked for, feelings when they were first laid off, current work situation, financial concerns, long-term effects of the lay-off, changes in self-image, perceptions of organizations now, networking activities, assistance received, future projections about the work place, and suggestions for changes in educational/training systems. The questions in these categories become apparent in the results to follow. It took about an hour to administer the schedule, and all eleven of the trained interviewers were involved in the data collection.

Four of the interviewers, including the primary researchers, coded the information. Initially, categories of responses were set up individually by each of the coders, and they placed the responses of all participants into the categories. Several subsequent meetings between the coders were held to develop a final consensus coding procedure using common categories and a common frame-of-reference for categorizing particular responses. Any differences in the coding were reconciled to the satisfaction of all four coders, thus ensuring consistency in the final coded data set. All of the data from the interview schedules were then coded and entered by the same researchers.

RESULTS AND DISCUSSION

T-tests and chi-squares were used to analyze the data. Where small *N*s required it, Likert-type responses were reduced into fewer categories for analysis. The probability levels associated with the tests are presented, and a significance level of .10 was adopted due to the exploratory nature of the study.

Characteristics of the Sample and Location in the Organizations

A summary of the demographic similarities and differences is presented in Table 1. The females in our sample were slightly younger than the males (40 vs. 43 yrs., t (142) = 270, $p < .01$). There were no significant differences with respect to spouse's work status; nor were there gender-based differences in the current employment status of the interviewees or in whether or not they were working full-time or part-time[2]. Men were more likely to be married or living with a partner (81%) than were women (60%) (χ^2 (1, N = 143) = 7.73, $p < .01$). Women were considerably more likely to be childless (46%) than were the men (28%) (χ^2 (1, N = 142) = 4.27, $p < .05$). This may suggest that more women than men could be opting to balance their work and family lives by not having children, or it could be that childless wives experience greater pressure to contribute to the family by working. Certainly the number of dual-earning families has risen dramatically in recent years, and it may well be normative now for women without dependent children to enter the labour force. Also it should be noted that the women in our sample were slightly younger than the men and may not have had time to start a family.[3] Still, given the average age of our women (about 40), we would not expect the majority of them to be contemplating beginning families.

The females had been in their most recent job for a considerably shorter period of time (4.8 yrs for females, 8.5 yrs for males; t (142) = 2.91, $p < .01$), with 14% of the men having job tenure of less than one year, as compared to 36% of the women ($p<.03$). Women were less likely to have positions in the oil industry, the dominant industry in the region (49% for females, 66% for males; χ^2 (1, N = 140)= 3.89, $p <$ .10). Males were more likely (72%) than females (56%) to have experienced mobility within their organizations (χ^2 (1, N = 143) = 3.46, $p <$ .10), but 91% of men and women who had moved, moved upward. Both sexes were similarly distributed in the general category of "manager/administrator" (36% for females, 39% for males), but an important difference emerged. More females than males identified their most recent occupation as that of "clerical/ administrative assistant" (30% for females, 10% for males; χ^2 (1, N = 144) = 8.64, $p <$ .01). This suggests that the female "work experience" (biased as it is by differences in position, length of tenure and presumably by salary) may well be quite different from the male "work experience." Accordingly, it might be wise to control for such variables while examining gender differences even for nominally white-collar workers (Wilson, 1991).

Previous research has shown that many psychological responses to being unemployed are directly related to financial viability. For example, Warr, Jackson, and Banks (1988) looked at mediating variables such as age, social relationships, marital status, ethnic group membership, social class, and local unemployment rates as well as gender in their review of unemployment and mental health research. Hamilton, Hoffman, Broman, and Rauma (1993) explored linkages between depression and unemployment controlling for race, marital status, age, education, prior income, and seniority as well as gender. Shamir (1985) examined the roles of marital and parental status, employment commitment, and financial state in terms of producing differential gender effects between unemployment and psychological well-being. All found that at least some of these variables explained variance in psychological well-being. The most consistent of these findings led us to collect information on certain control variables.

Thus, we examined gender differences and similarities both before and after controlling for the impact of three variables on financial status. We controlled for: 1) whether or not the person had a full-time working spouse, 2) number of (dependent) children, and 3) the age of the respondent. All of these variables should have financial and social support implications for people who lose their jobs. For example, a full-time working spouse will be able to help out with the most immediate

TABLE 1 Organizational and Socio-Demographic Gender Differences

Item		*Significance*
age	males (M = 43 yrs), females (M = 40 yrs)	$p < .01$
marital status	81% males married, 60% of females married	$p < .01$
spouse's work status	71% of males', 82% of females' spouses worked	ns
full-time work	65% of males', 73% of females' spouses worked	ns
childlessness	28% of males, 46% of females were childless	$p < .05$
time on current job	males (M = 8.5 yrs), females (M = 4.8 yrs)	$p < .01$
industry location*	66% males, 49% females worked in oil industry	$p < .10$
mobility	72% males, 56% females had moved (most upward) within their last organization	$p < .10$
manager position	39% males, 36% females were "manager/administrator"	ns
clerical position	10% males, 30% females were "clerical/administrative assistant"	$p < .01$

*as classified by the 1991 edition of America's Top 300 Jobs: A Complete Career Handbook, JIST works, Inc., Indianapolis, Indiana (pp. iv - vi). This, in turn, is based on the U.S. Department of Labor's Occupational Outlook Handbook, Bulletin 2350.

financial implications of job loss. Further, a large number of children to support would be expected to exacerbate any financial hardship experienced. Finally, relative to older employees, younger ones would be expected to have a more substantial financial burden.

The results of the simple chi-square tests for gender differences, as well as those from logistic regression (where the statistical improvement of being able to predict the dependent variable with knowledge of gender of the respondent *over and above* the three control variables) were assessed and were basically the same. Thus, the more straightforward, simple chi-square test results are reported. In most instances, there are simply no substantively meaningful bivariate gender differences to explain, nor were there any strong relationships between these control variables and gender. While organizational position was deemed, theoretically and empirically, to be the most important variable to control for, ours is a study of primarily white collar workers, so position varies much less than in a sample across the full occupational range. Thus, few gender differences were anticipated. We were nonetheless able to examine the organizational position variable directly in a position-by-sex framework.

TABLE 2 Gender by Perceptions of and Experiences with the Organization

Item	*% Females Agree*	*% Males Agree*	*Significance*
gave up personal time for the organization	77	95	$p < .01$
would have stayed at the organization indefinitely	55	76	$p < .05$
commitment to the organization *	74	81	ns
career development opportunities at organization	68	75	ns
expectations of a traditional career **	83	84	ns

* we assessed this by asking "Would you say you were a strongly committed employee, about as committed as most, or less than most?"; Those that indicated "strongly committed" were coded as "1" and "as committed as most" or "less than most" as "0".

** we assessed this by asking "When you were preparing yourself for a working career, did you imagine yourself working in a traditional organizational context? (career mobility through promotion)." Those responding "yes" were coded with a "1" and those that indicated "no" were coded "0".

Perceptions of the Organization

The results of this category of analysis are presented in Table 2. Males reported giving up more personal time for the organization (working nights/weekends /overtime without pay) than females (95% for males vs. 77% for females) (χ^2 (1, N = 144) = 10.68, $p < .01$), and were also more likely to state that they would have stayed at the organization indefinitely all things being equal (76% for males vs. 55% for females) (χ^2 (1, N = 143) = 6.36, $p < .05$). This might suggest that women may be able to more easily disengage themselves from an organization than men, or that for men, the job has higher salience in their overall lives. A vivid example of this was a remark made by a man (age 38) in talking about his finances and his future plans: "I feel like my life is in ruins. I feel castrated not bringing in a pay cheque." However, it might also reflect that men have been at the organization longer, or that more women are working at the clerical level. Finally, perhaps women perceive themselves to be more employable elsewhere. For example, Table 4, item 3, shows that significantly more men than women indicated that they anticipated being out of work for at least six months.

The organizational commitment literature would argue that women and men do not differ in terms of their organizational commitment, *ceteris paribus*. On this issue, our data are mixed. On the one hand there was no statistically significant difference in reported commitment between males and females. On the other, we have already noted that men were more likely to have stayed on with their organization, and claimed to have more often given up personal time for their organizations. Koberg and Chusmir (1989) found no gender differences in organizational or professional commitment for both managers and non-managers. Aven, Parker, and McEvoy (1993) carried out a meta-analysis of 14,081 independent samples and found that gender and organizational commitment were unrelated. We are suggesting that the differences we found seem less likely to do with organizational commitment *per se* than with position differences between men and women. In turn, this may be related to commitment.

Although these two points indicate that some aspects of the organizational experience may be different for men and women, there were many more similarities than differences in their work and downsizing experience. In addition to similar organizational commitment levels, men and women had similar employment likes (e.g., achievement of job goals, people worked with, challenge of the job) and employment dislikes (e.g., organizational politics and the bureaucratic nature of their work). Similar proportions had received career development opportunities while in their last job (typically courses were paid for or offered by the organization), and both sexes clearly expected to experience a traditional career of "climbing the corporate ladder."

Downsizing Experience

There was only one gender difference expressed with regard to the downsizing experience (see Table 3); more men (73%) than women (58%) felt that the organization had treated them fairly, (χ^2 (1, $N = 137$) $= 4.22$, $p < .05$). The perception of "fairness" is very much a complex and subjective one concerned with organizational justice issues (e.g., Greenberg, 1993; Hendrix, 1998). We did not collect information regarding these perceptions, but this does argue for some control of the gender variable in organizational fairness and justice research.

The large number of similarities on more objective "fairness" questions included the degree to which they had had previous warning of the downsize/restructuring, the opportunity to express their views in an exit interview, the feeling that the organization had treated them with respect, the receipt of a severance package, and the option to use outplacement services paid for by the organization. Thus, on balance, the perceptions of the organization from which they had been "let go," as well as the experience itself, was very similar for the men and women in our sample.

TABLE 3 Gender by Downsizing Experience

Item	*% Females Agreeing*	*% Males Agreeing*	*Significance*
had previous warning of the downsize	53	64	ns
opportunity to express views in an exit interview	32	32	ns
felt the organization treated them fairly	58	73	$p < .05$
felt the organization treated them with respect	67	74	ns
received a severance package	87	88	ns
received outplacement counseling	68	75	ns

TABLE 4 Gender by Initial Responses to Being 'Let Go"

Item	*% Females Agree*	*% Males Agree*	*Significance*
felt upset or depressed	43	25	$p < .05$
felt financially secure	53	72	$p < .05$
anticipated being out of work more than six months	22	41	$p < .05$
family responded in a supportive way	88	62	$p < .01$
family was initially upset or anxious	10	30	$p < .05$
friends were supportive	75	84	ns
engaged in job hunting	46	64	ns
took time off	54	36	ns
joined network groups	48	33	$p < .10$
found network groups to be valuable	82	97	$p < .10$
now engaged in career development activities	51	71	$p < .05$

The minority of instances in which people did not feel that they had been treated fairly or with respect generally produced some very bitter reactions among our respondents. It was clearly cathartic for them to have the opportunity to express them, particularly given that fewer than one-third of either the men or women had the opportunity to speak to anyone in the organization in the context of an exit interview.

Initial Responses to Being "Let Go"

There was a broad range of initial affective reactions to having lost their jobs. Our participants provided a list of initial feelings after being let go which included being upset/depressed, shocked, keeping busy, opportunistic, and just "O.K." (see Table 4). One subject (male, age 48) described hearing the news as equivalent to hearing of "a death in the family," while another (male, age 47) claimed to have felt relieved, "like I was just released from jail." This wide variation in the response to being laid off is consistent with the findings of Fineman (1983), even though his research was published almost 20 years ago.

Relative to males, females were more likely to report being upset or depressed about their job loss (43% for females vs. 25% for males) (χ^2 (1, N = 139) = 4.52, $p < .05$). This seems initially at odds with the organizational commitment literature cited earlier that notes that the work role is just as important for women as it is for men (e.g., Aven et al. 1993; Koberg & Chusmir, 1989). It also seems strange given that women had been with the organization a shorter length of time and did not intend as often as men to stay permanently. This finding may, however, be related to the fact that males reported that they felt more financially secure than did females right after the job loss (72% for males vs. 53% for females) (χ^2 (1, N = 144) = 5.08, $p < .05$). As finances were presumed to be a sensitive topic to these individuals, we did not collect specific information regarding salary levels, financial status, or severance packages. While this information would have been helpful in interpreting our findings, we did not want to put our participants on the defensive given that they were freely giving of their time.

Interestingly, males anticipated being out of work for a longer period of time (more than six months) than did females (41% for males vs. 22% for females) (χ^2 (1, N = 116) = 3.98, $p < .05$). Given that financial aspects of unemployment have been shown to be related to psychological well-being (e.g. Shamir, 1985), this seems the most plausible explanation for this finding of different initial reactions to their job loss. Of our respondents who thought they were very secure financially at the time they lost their job, 41% described their first reaction as negative, 48% described themselves as somewhat secure, 59% described themselves as not very secure and fully 86% described themselves as not at all secure. This would seem quite consistent with the structural explanation we provide for these differences. It is also quite possible that severance packages are given to those with longer tenure and/or higher status in the organization; in our sample these groups would be disproportionately male.

More women indicated that their family responded in a supportive way (88% for females vs. 62% for males) (χ^2 (1, N = 132) = 9.23, $p <$ .01). Men were more likely to report that their family was initially upset or anxious (30% for males vs. 10% for females) (χ^2 (1, N = 132) = 6.24, $p < .05$). Some male respondents referred to their wives as "becoming a nervous wreck," and as being "inconsolable." Since there was no difference in spouse's work status, it is not probable that this finding is due to the man being the only "breadwinner" in the family. Indeed, several of our participants indicated that we should also carry out a study of spousal response to unemployment.

Similar numbers of men and women indicated that their friends were very supportive through this period. Behaviorally, the men and women took similar actions after initially being laid off, with job hunting topping the list and taking time off as the second most common activity. For those who had been looking for a job, the steps they engaged in were similar (e.g., consisting of sending out resumes, looking at the want ads, networking, and making phone calls).

Females were somewhat more likely to have joined networking groups than males (48% for females vs. 33% for males) (χ^2 (1, N = 143) = 2.92, $p < .10$). Perhaps the more relational approach women tend to take towards problem-solving is an explanation for this finding. Leana and Feldman's (1991) work found females tended to respond to being laid off by seeking social support, while males tended to engage in job-search activities. Although our data did not reach statistical significance, nearly 20% more men engaged in job hunting than did women in our sample as an initial response to being let go. Men in our sample were, however, significantly more likely to be engaged in career development activities (e.g., taking specific skill courses, going back for another degree) than were women (71% for males vs. 51% for females) (χ^2 (1, N = 139) = 5.29, $p < .05$). Why this is the case is not clear. Again, this may be consistent with the problem-focused activities by men and symptom-focused activities by women (cf. Leana & Feldman, 1991). Alternatively, it may reflect differences in their assessments of what it would take to get re-employed, given that women were more often found in clerical and support positions.

Several men in our study expressed a clear lack of interest in formal networking organizations, and some did so in a stereotypic masculine manner. One man, for example, said "I am not a get-together sort of guy," while another described himself as "an independent kind of person." However, for those that had joined networking groups, more men (97%) than women (82%) felt the networking experience was valuable (χ^2 (1, N = 53) = 3.37, $p < .10$).

Long-Term Responses to Being "Let Go"

Regarding our analysis of long-term responses to being let go, it should be noted that the entire sample was included, and that most of them had been displaced within the last two years. Thus the "long-term" was relatively short for the vast majority of them. Given that caveat, the long-term effects of job loss were similar for men and women. Most reported increasing concern with making ends meet now, that they would be happy to work for an organization again, and that they felt they would again be strongly committed employees. They also cited similar long-term effects for themselves (e.g., getting their life together, increasing monetary concerns, not as optimistic now), their family (e.g., coping/supportive or stressed/anxious), and their friends (e.g., supportive or loss of contact). Both men and women generally felt their self-confidence had changed since being laid off, but we found no simple pattern of decline or other evidence that job loss was universally perceived to have been traumatic. A similar variety of patterns of the change were reported by both groups (e.g., steady increase, steady decrease, an initial decrease followed by an increase, and a whole series of "ups" and "downs" depending on the job outlook for that day). One respondent put this latter pattern this way. "At 8 a.m. I feel great; by 10 or 11 p.m., I feel terrible, lying in bed thinking about my bank account."

Present Work Situation

These results are summarized in Table 5. Similar numbers of males and females were presently working, but the work pattern was very different across sexes with females being employed as full-time, salaried employees more often (64% for females vs. 13% for males) (χ^2 (1, N = 44) = 11.91, $p < .01$), and males doing more contractual work or starting their own businesses (63% for males vs. 30% for females) (χ^2 (1, N = 68) = 5.99, $p < .05$). This is an intriguing finding given that there seems to be a general rise in entrepreneurship across Canada. It runs contrary to recent statistics suggesting women are starting more small businesses than are men. It may reflect different work status again, since many more women than men were in the clerical/secretarial ranks, while men had longer tenure as administrators. It seems plausible that there may be simply more work opportunities available for women in these positions than for men in theirs, given their experience (and salary), and that men in our sample may have felt forced to become "reluctant entrepreneurs" (e.g., Boyle, 1994).

Those that were working had been out of work for a similar length of time (4.7 months for females and 6.4 months for males). Almost half of both sexes were engaged in new work for which they had never been specifically trained. This highlights the need for re-training programs—with almost half of our participants under-trained for their new positions. Both males and females who worked for an organization said they were as strongly committed or as committed as most other employees. Thus, the idea that employees who have been laid off will

TABLE 5 Gender by Present Work Situation

Item	*% Females Agreeing*	*%Males Agreeing*	*Significance*
presently working	40	47	ns
full-time, salaried employment	64	13	$p < .01$
contractual work or owned own business	30	63	$p < .05$
did work for which they had not been trained	45	47	ns
presently committed to their organization	80	77	ns
felt they had entrepreneurial qualities	62	60	ns
there are advantages in owning small business	75	88	ns
there are disadvantages in owning small business	88	98	ns
higher levels of job satisfaction than in organizational job	67	64	ns

"get back" at their future employers by having lower levels of commitment is not well-supported by our findings.

Many of "our" males and females felt that they had "entrepreneurial qualities" and indicated that they were being forced to use these qualities. Today's work world demands the ability to sell yourself, and indeed, that was one of the entrepreneurial qualities cited by many of our respondents. Both sexes indicated that they had similar strong selling points (e.g., technical expertise and strong character traits such as loyalty, work experience, and interpersonal skills).

Those males and females who were working on contract or who owned their own businesses reported similar advantages (e.g., freedom) and disadvantages (e.g., lack of money/security) to the way they made their living. Men and women reported similar things they missed most about organizational life (e.g., money, security, co-workers). The majority of both sexes working on their own reported higher levels of job satisfaction compared to their former organizational jobs.

As noted previously, we recognize that differences in the positions previously held are also highly relevant and thus we now turn to analyses of gender similarities and differences with only position in the organization controlled. We did this separately due to the considerably smaller sample size that would have resulted if we had done so for the previous analyses. However, it does mean that uncontrolled variables are plausible sources of rival hypotheses.

Manager/Administrator vs. Clerical/Administrative Assistant Females

Of the 47 females, 14 were categorized as "manager/administrators" and 14 were categorized as "clerical/administrative assistants" (other classifications included "retail" and "technical"). We examined possible differences between these two sub-groups of displaced female workers in an effort to identify specific, position effects. In this analysis, small *N*s constrained us to engage only in simple chi-square analysis with no control variables taken into account (see Table 6).

TABLE 6 Manager/Admin. vs. Clerical/Admin. Assistant Differences for Females Only

Item	*% Manager Agreeing*	*% Clerical Agreeing*	*Significance*
received outplacement counseling	86	50	$p < .05$
no partner	14	71	$p < .01$
full-time working partner	69	21	$p < .05$
felt secure financially	43	0	$p < .01$
initially concerned about making ends meet	10	83	$p < .001$

We found that the manager/administrators were more likely to have received outplacement counseling after being laid off than were the clerical/administrative assistants, (χ^2 (1, N = 28) = 4.09, $p < .05$). Many organizations offer outplacement counseling as part of a severance package only to those in the higher levels, and our findings reflect this differential treatment.

The clerical/administrative assistants were far more likely to have had no partner (71%) than were the manager/administrators (14%) (χ^2 (1, N = 28) = 9.33, $p < .01$). The manager/administrators were much more likely to have had a full-time working partner (69%) than were the clerical/administrative assistants (21%) (χ^2 (3, N = 27) = 11.31, $p <$ .05). This would seem to have clear implications for the relative financial security of these two groups. This could reflect age differences in part, or reflect again on willingness to leave the organization (see Table 2), or mobility potential.

As expected, we found that *none* of the clerical/administrative assistants claimed to feel very secure financially after initially being laid off, as compared to their manager/administrators counterparts, of whom 43% made this claim, (χ^2 (1, N = 28) = 7.64, $p < .01$). We looked at this finding more carefully, controlling for partner's work status, and interestingly, while all ten of the non-partnered clerical/ administrative assistants felt less than very secure, the two non-partnered manager/administrators felt very secure, (χ^2 (1, N = 12)= 12.00, $p < .01$). Clearly, their security is not exclusively a function of having a working partner.

In this same vein, the clerical/administrative assistants were more likely to say that they were concerned about making ends meet compared to their manager/administrators counterparts, (χ^2 (1, N = 21) = 5.45, $p < .05$). As before, whereas eight of the ten non-partnered clerical/administrative assistants felt concerned about making ends meet, the two non-partnered manager/administrators indicated that they were not concerned, (χ^2 (1, N = 11)= 6.52, $p < .05$). Unfortunately, we have too few cases to explore such differences further. They could reflect personality differences, differences in self-perception, income, abilities, age or perceived opportunities. Most likely, they reflect income differences. In any event that what we have here labeled "positional differences" are quite important in understanding the reactions to their situation of female displaced workers.

Differences Between Male and Female Manager/Administrators

We next explored possible gender differences among those classified as manager/administrators (21 males and 14 females). Again, small *N*s permitted us to engage only in chi-square analysis with no control variables.

In examining the differences between these two groups, we found that the males were older (46 vs. 40 yrs), (t (33) = 2.23, $p < .05$), and had been at the organization that had laid them off for a substantially longer (13.5 vs. 4.8 yrs), (t (33) = 3.08, $p < .01$). While for the entire sample it was the case that men were more likely to be in the oil industry than women, it was not the case for this particular subsample. There were a few differences that were consistent with the gender findings reported earlier. Perhaps most interestingly, more women (91%) were optimistic than men (61%) in anticipating that it would be six months or less before finding work again, (χ^2 (1, N = 27) = 4.54, $p < .05$). This might reflect a rational perception of marketplace demand, for either or both of two reasons. Employment equity considerations have made positions more available to females. Alternatively, there are fewer women administrators/ managers than there are men, making the competition less intense. In addition, given their shorter work experience, it is possible that lower comparative salaries might make women more attractive to hiring organizations.

These explanations are consistent with our finding that among those that were working again, the men were more likely to be engaged in contractual work/owning their own business (75%), while the women were more likely to be in full-time traditional organizational positions (91%), (χ^2 (1, N = 19) = 11.68, $p < .01$). To an extent, this difference may reflect the specifics of the larger labour market. Men who have lost positions in the oil industry during this time may well have been able to set themselves up as entrepreneurs in the many smaller companies that have been starting up concurrently with downsizing. Alternatively, in the absence of traditional organizational opportunities for these laid-off but experienced middle managers, perhaps a considerable number of them have decided to try marketing themselves as consultants, or as subcontractors within the industry. It would require another study to test some of these plausible alternatives in the grounded manner that seems necessary.

Another gender difference is the apparent change in self-confidence since being laid off. Men were more likely to say that their self-confidence had gone steadily downward (63% vs. 14%), while women were more likely to have said that their self-confidence had gone down initially, but then went up (86% vs. 38%), (χ^2 (1, N = 15) = 3.62, $p < .10$). It is possible that this too reflects a growing awareness among the women of their marketability. It is also possible that the women found the experience to be a personally strengthening one. One woman (age 43) remarked in this vein that "I am stronger, tougher—I anticipate layoffs again and I am steeled for it. I know I'll survive; I don't doubt that now." A male respondent, on the other hand (age 44) seemed rather less personal and more analytical in reflecting that "our society defines people by their jobs. If you lose that job, you lose the ability to define yourself." This finding too suggests that future studies in this area should target the larger market factors within the context of which working lives are led.

Summary

There were similarities and differences between the sexes with regard to their work and downsizing experience. The type of work they were engaged in prior to being laid off tended to be different, yet their feelings about their work were similar. The manner in which their organizations handled their layoffs was basically the same, but there were gender differences regarding how they felt and what they did after initially being laid off. Still, the long-term effects were similar. One particularly intriguing difference with regard to their present work situations was that females were more likely to have re-entered traditional organizational situations, while the males were more likely to have started their own businesses. This seems likely to reflect differential (and probably accurate) perceptions of the likelihood of their successful re-entry into similar positions (hierarchically as well as with regard to salary) within the shrinking organizational context. It may also reflect mens' willingness to take the kinds of risks involved in entering the entrepreneurial arena, or the differential encouragement the sexes experience from their families and outplacement counselors.

Structural factors (i.e., position) seem more relevant in people's perceptions of the downsizing experience than do gender differences. This may be surprising to those who argue that men have traditionally been expected to be more involved in their work and careers than women, and therefore being laid off should affect them differently. Again, where differences still exist it seemed most parsimonious to treat them as evidence of position rather than gender differences, even though they were nominally in the same category. Our findings are consistent with a reasonably large number of studies indicating that the differences between the sexes will be outweighed by the similarities in the work context (e.g., Aven *et al.*, 1993; Donnell & Hall, 1980; Eagly & Johnson, 1990; Kanter, 1977; Koberg & Chusmir, 1989; Palmer, 1983; Powell, Posner, & Schmidt, 1984).

Our findings provide suggestions for future research as well as implications for organizations concerned with meeting future labour needs. In terms of administrative utility, this study makes several points. One is that half of our sample subsequently engaged in work for which they had never been trained. Recognizing this, either we need to encourage universities and other educational institutions to train for flexibility and generic skills, or, if we perceive this to be a problem, we need to better forecast our labour needs and urge educational institutions to offer retraining to meet them. A second major point is that employees who have been released claim to harbour no continuing grudges. About 80% said they would be happy to work in an organization again, and about 90% felt that they would be committed workers. Effective retraining efforts may leave even fewer employees embittered, and make it still less likely that they will view potential employers as enemies on whom to wreak revenge.

There are also some lessons learned here that could improve the utility of future academic studies of this topic. Investigators would do well to gather very detailed information on the nature of the job, so that control variables can be meaningful. The use of "white" vs. "blue" vs. "pink" as a control variable is simply too imprecise given the changes organizations have undergone. Many people are performing multiple tasks with increased responsibility despite their possible low hierarchical level. This is quite likely to be confounded with gender, as our study has indicated, in addition to other extraneous variables (e.g., full-time working partner, number of dependent children, and age). Analytically, perhaps the most striking point made in this exploratory study is that without much more specific data from the actors involved, and in the absence of details concerning the broader labour market context in which they live their working lives, it is far too easy to suggest plausible, grounded, and yet contradictory inferences with which to "make sense" of the data.

REFERENCES

Armstrong-Stassen, M. (1993). Survivors' reactions to a work force reduction: A comparison of blue-collar workers and their supervisors. *Canadian Journal of Administrative Sciences, 10*, 334-343.

Aven, F.F., Parker, B., & McEvoy, G.M. (1993). Gender and attitudinal commitment to organizations: A meta-analysis. *Journal of Business Research, 26*, 63-73.

Boyle, E. (1994). The rise of the reluctant entrepreneurs. *International Small Business Journal, 12*, 63-69.

Brockner, J. (1988). The effects of work layoffs on survivors: Research, theory and practice. *Research in Organizational Behavior, 10*, 213-255.

Brockner, J., Konovsky, M., Cooper-Schneider, R., Folger, R., Martin, C., & Bies, R.J. (1994). Interactive effects of procedural justice and outcome negativity on victims and survivors of job loss. *Academy of Management Journal, 37*, 397-409.

Cascio, W.F. (1995). Whither industrial and organizational psychology in a changing world of work? *American Psychologist, 50*, 928-939.

Donnell, S.M., & Hall, J. (1980). Men and women as managers: A significant case of no significant differences. *Organizational Dynamics, 8*, 60-77.

Eagly, A.H., & Johnson, B.T. (1990). Gender and leadership style: A meta-analysis. *Psychological Bulletin, 108*, 233-256.

Fineman, S. (1983). *White collar unemployment*. Chichester, U.K.: John Wiley & Sons.

Freeman, S.J., & Cameron, K.S. (1993). Organizational downsizing: converging and reorientation framework. *Organization Science, 4*, 10-29.

Greenberg, J. (1993). The social side of fairness: Interpersonal and informainformational classes of organizational justice. In R. Cropanzano (Ed.) *Justice in the workplace: Approaching fairness in human resource management* (pp. 79-103). Hillsdale, NJ: Erlbaum.

Greenhalgh, L., Lawrence, A.T., & Sutton, R.I. (1988). Determinants of work force strategies in declining organizations. *Academy of Management Review, 13*, 241-254.

Hain, T. (1993, April). Dynamics of change in corporate America. In S. J. W. Kozlowski & G. T. Chao (Chairs), *Organizational downsizing: Implications for research and practice*. Symposium conducted at the meeting of the Society for industrial and organizational psychology, San Francisco.

Hamilton, V.L., Hoffman, W. S., Broman, C.L., & Rauma, D. (1993). Unemployment, distress, and coping: A panel study of auto workers. *Journal of Personality and Social Psychology, 65*, 234 -247.

BEST COPY AVAILABLE

Hartley, J. & Fryer, D. (1984). The psychology of unemployment: A critical appraisal. In G.M. Stephenson & J.H. Davis (Eds.) *Progress in Applied Social Psychology*, Vol. 2, pp. 3 - 30. New York: John Wiley & Sons.

Hedlund, J., & Smith, E. M. (April 30 - May 2, 1993). *Job loss research: Implications for organ-izational downsizing*. Paper presented at the Eighth Annual Conference of the Society for Industrial and Organizational Psychology, San Francisco, CA.

Hendrix, W.H., Reub, J.D., & Steel, R.P. (1998). Sexual harassment and gender differences. *Journal of Social Behavior and Personality, 13*, 235-252.

Jahoda, M. (1988). Economic recession and mental health: Some conceptual issues. *Journal of Social Issues, 44*, 13-23.

Kanter, R. M. (1977). *Men and women of the corporation*. New York. Basic Books.

Koberg, C.S., & Chusmir,L.H. (1989). Relationship between sex role conflict and work-related variables: Gender and hierarchical differences. *Journal of Social Psychology, 129*, 779-791.

Kozlowski, S. W. J., Chao, G.T., Smith, E.M., & Hedlund, J. (1993). Organizational downsizing: Strategies, interventions, and research implications. In C.L. Cooper & I.T. Robertson (Eds.), *International Review of Industrial and Organizational Psychology*, Vol. 8, (pp. 263-332). New York: John Wiley & Sons.

Leana, C.R., & Feldman, D. C. (1991). Gender differences in response to unemployment. *Journal of Vocational Behavior, 38*, 65-77.

Leana, C.R., & Feldman, D. C. (1994). The psychology of job loss. *Research in Personnel and Human Resources Management, 12*, 271-302.

Mentzer, M.S. (1996). Corporate downsizing and profitability in Canada. *Canadian Journal of Administrative Sciences, 13*, 237-250.

Muller, J., Hicks, R., & Winocur, S. (1993). The effects of employment and unemployment on psychological well-being in Australian clerical workers. *Australian Journal of Psychology, 45*, 103-108.

Palmer, D.D. (1983). Personal values and managerial decisions: Are there differences between women and men? *College Student Journal, 7*, 124-131.

Perrucci, C. C., Perrucci, R., Targ, D. B., & Targ, H.R. (1988). *Plant closings: International context and social costs*. New York: Aldine de Gruyter.

Powell, G.N., Posner, B.Z., & Schmidt, W.H. (1984). Sex effects on managerial value systems. *Human Relations, 37*, 909-921.

Rosener, J.B. (1990, Nov. – Dec.). Ways women lead. *Harvard Business Review*, 119-125.

Shamir, B. (1985). Sex differences in psychological adjustment to unemployment and reemployment: A question of commitment, alternatives or finance? *Social Problems, 33*, 67-79.

Snyder, K.A., & Nowak, T.C. (1984). Job loss and demoralization: Do women fare better than men? *International Journal of Mental Health, 13*, 92-106.

Statham, A. (1997). The gender model revisited: Differences in the management styles of men and women. *Sex Roles, 16*, 409-429.

Struthers, N.J. (1995). Differences in mentoring: A function of gender or organizational rank? *Journal of Social Behavior and Personality, 10*, 265-272.

BEST COPY AVAILABLE

Super, D.E. (1990). A life-span, life-space approach to career development. In D. Brown, L. Brooks, & Associates (Eds.), *Career choice and development*, (2nd ed.) (pp. 197-261). San Francisco: Jossey-Bass.

Warr, P., Jackson, P., & Banks, M.H. (1988). Unemployment and mental health: Some British studies. *Journal of Social Issues*, *44*, 47-68.

Welsh, L. (1992, August 11). Slow recovery isn't creating jobs. *Calgary Herald*, p. B5.

Wilson, S. (1991). *Women, families and work*. Toronto: McGraw-Hill Ryerson Ltd.

---

[1] Women may well have broken into this white collar category while still being concentrated systematically lower within it than men. This is the implication of the glass ceiling. This being the case, it is not clear whether gender differences should be expected within the broad category or not.

[2] If part-time, other and not at all are categorized separately instead of collapsed into a single category, the gender difference is statistically significant ($p<.004$), and the difference is clearly due to the fact that while 27% of married men had spouses who worked part-time, no married women had spouses who worked part-time.

[3] Fully 39% of the married women in our sample had no children, as compared to 19% of married men ($\underline{p} < .05$). Slightly over half of the younger people (aged 30-39) had no children, as compared to 21% of those over 46 ($\underline{p} < .02$).

BEST COPY AVAILABLE

How to Submit Papers to *NAJP*

The submission of good papers is very important to any psychology journal. We hope that you will support our views about what a psychology journal should be like by submitting papers now. We promise to mail a decision on your paper within 6 weeks of receipt by us. We promise to publish your paper in an average of 6 months of receipt of a final accepted version.

Submit 3 copies of each manuscript prepared according to APA guidelines. Also include a diskette with your manuscript (or e-mail the file to NAJP@mpinet.net. Give us your e-mail address and a fax number where we can reach you even if you do not send the manuscript by e-mail. There is a $5 (U.S. dollars) submission fee.

We encourage you to have your paper read by peers before submission.

If the final paper is accepted, please send a check or purchase order for the amount specified with your final draft (billed at $25 dollars per typeset page in units of two pages).

Submission of a manuscript to the Journal is a contract to publish with the Journal if the paper is accepted. Because of our rapid editorial feedback, simultaneous submission to other journals is not allowed. We will offer brief comments on the suitability of a topic for publication in *NAJP* before a submission.

Send all correspondence to: *North American Journal of Psychology*, 240 Harbor Dr., Winter Garden, FL 34787, phone 407-877-8364.

SUBSCRIPTIONS

All subscriptions are on a calendar year basis only. If you order late in the year, the earlier issues will be sent to you. Institutional rate, $65. Individual rates, paid by personal check or charge card, $30. Add $7 for Canadian subscriptions. Add $8 for subscriptions outside North America. Phone orders accepted with Visa, MasterCard or American Express. Call 407-877-8364. The *North American Journal of Psychology* is published semi-annually in June & December.

☐ Visa ☐ AMEX ☐ MC

Card # ____________________ Exp. Date ________

Name ____________________

Address ____________________

City ____________________ State ________ Zip ________

A Summary of Our Philosophy

The *North American Journal of Psychology* publishes scientific papers that are of general interest to psychologists and other social scientists. Papers may encompass a wide variety of topics, methods, and strategies. It is our belief that many good scientific papers are rejected for invalid reasons. Some journals reject up to 90% of their submissions because they don't have space. Furthermore, studies of the review process strongly suggest that not all of the lucky 10% are better papers than those that get rejected. In our view, many of those rejected papers are meritorious with need for only minor revisions. Perhaps our philosophy can be summed up this way: We are looking for ways to strengthen good papers rather than searching for weak excuses to reject them.

North American

Journal of Psychology

CG 029765

Vol. 1, No. 2 1999

Advisory Editorial Board

ADRIAN FURNHAM
Psychology
University College London

MANUEL LONDON
Psychology
SUNY, Stony Brook

JUTTA HECKHAUSEN
Max Planck Institute for Human
Development and Education

KAREN LYNESS
Management
Baruch College, CUNY

DOUGLAS JACKSON
Psychology
University of Western Ontario

ROBERT PASNAK
Psychology
George Mason University

HEIDI KELLER
Psychology
University of Osnabrueck

RICHARD RYAN
Psychology
University of Rochester

PHILIP ZIMBARDO
Psychology
Stanford University

Editor

LYNN E. McCUTCHEON

How to Subscribe to The *North American* Journal of Psychology

All subscriptions are on a calendar year basis only. If you order late in the year, the earlier issue will be sent to you. Institutional rate: $65. Individual rate: $30. Add $7 for Canadian subscriptions. Add $8 for subscriptions outside North America. *North American* Journal of Psychology is published semi-annually in June and December.

Now visit our website at http://najp.8m.com

North American Journal of Psychology

December 1999 Vol. 1, No. 2

Editor's Comments: iii

To Thine Own Self be Untrue: Self-awareness in Authoritarians 157
Bob Altemeyer

Training in Psychology and Belief in Recovered Memory Scenarios 165
Lori R. Van Wallendael

The Effects of Student Academic Presentation on Perceptions of Gender and Sociability 173
Terell P. Lasane, Peter N. Sweigard, Alexander M. Czopp, William L. Howard, & Myron J. Burns

Gender Differences in Psychological Distress, Coping, Social Support and Related Variables Following the 1995 Dinal (Turkey) Earthquake 189
N. A. Karanci, N. Alkan, B. Aksit, H. Sucuoglu, & E. Balta

Self-esteem and Sex Attitudes as Predictors of Sexual Abstinence by Inner-city Early Adolescents 205
Joseph Donnelly, Eva Goldfarb, David F. Duncan, Michael Young, Carolyn Eadie, & Danielle Castiglia

Comparison of a Physical and a Mental Disability in Employee Selection: An Experimental Examination of Direct and Moderated Effects 213
Denise A. Koser, Munehiko Matsuyama, & Richard E. Kopelman

The Real and Perceived Impact of the Abbreviated 1998-1999 NBA Season on the Final Standings 223
Diane D. Ashe & Lynn E. McCutcheon

Sub-Goals and Temporal Orientation: Consequences on Competence in an Academic Task 229
Terell P. Lasane, Tara L. Cramer, & Matthew J. Breymaier

Evaluation of an Abstinence-based Curriculum for Early Adolescents: First Year Changes in Sex Attitudes, Knowledge and Behavior 243
Eva S. Goldfarb, Joseph Donnelly, David F. Duncan, Michael Young, Carolyn Eadie & Danielle Castiglia

Structure of Multicultural Attitudes Toward Disabilities 255
Dorothy Scattone & Howard B. Lee

Measuring Cue Perception: Assessment of Reliability and Validity 261
Karen A. McIntire, Margaret M. Danforth & H. G. Schneider

Shyness and Group Brainstorming: Effects on Productivity and Perceptions of Performance 267
Scott D. Bradshaw, Mark F. Stasson & Donna Alexander

An Interview with the Authors of the Universal Nonverbal Intelligence Test 277
Bruce A. Bracken, R. Steve McCallum & Michael F. Shaughnessy

Religious Orientation and Religious Experience 289
John Maltby

Levels of Elaboration, Interference and Memory for Vocabulary Definitions 293
Michael Shaughnessy and Dale Dinnell

Gender and Humor: What Makes a Difference? 307
Joanne Gallivan

Preliminary Normative Data on the Depression-Happiness Scale for a Mildly Depressed Group 319
Christopher Alan Lewis, Stephen Joseph & Mark Shevlin

Impact of Voice on Source Credibility in Advertising: A Self-monitoring Approach 323
Claire Gelinas-Chebat and Jean-Charles Chebat

Editors Comments

In the very first issue of The *North American Journal of Psychology* I made the bold assertion that I thought *NAJP* could do better than most of the conventional psychology journals in reducing author frustration, speeding up the review process, accepting good papers rather than rejecting them, and publishing papers in a more timely fashion. Today I am even more convinced that those were not idle boasts.

Nevertheless, I must apologize to Dr. Elliott H. Schreiber for the mistake in the "Inadequacy" row of Table 1 in his fine article on violent children. If you slide the numbers in that row to the left by one column and insert "<.01" in the "Level of Significance" column the Table will make more sense.

Once again I thank the reviewers, all of whom did a marvelous job of critiquing papers promptly and with great insight. Once again I thank the authors for having the faith and the courage to send their manuscripts to an unknown, untested journal.

Steps are underway to reduce the extent to which NAJP is unknown and untested. We now have a website, http://najp.8m.com, which we encourage you to visit. We are working to get NAJP listed in various indexes, guides to research journals, and abstracting services. If you can help cut through the red tape that sometimes prevents new journals from overcoming bureaucratic inefficiency, or if you know of a place where we should be listed, please let us know.

Lynn E. McCutcheon, editor

To Thine Own Self Be Untrue: Self-Awareness in Authoritarians

Bob Altemeyer
University of Manitoba

Authoritarians were described and data presented in support of the argument that authoritarians are less likely than most people to exhibit self-awareness. The discussion focused on fear as an underlying cause.

It happened many years ago, but I still vividly remember the pivotal moment in my life--a moment when my future became disconnected with most of my past. It happened on September 19, 1961 when I was a fourth-year business major attending the first meeting of an organizational behavior course. The professor, Chris Argyris, led us through an exercise designed to trap hypocrites. With my eyes wide shut I joined others in the class and charged madly into the ambush. In the searing moment when the trap slammed shut and I realized I was a hypocrite, I also realized I really had no idea who I was.

Within a few months I had completely lost my lust for a million dollars, broken with the religion of my forefathers, and bid sad farewell to my fiancee. I thought I knew where I was going and what I was going to be. But I set off in a new, completely unanticipated direction; I had a lot of self-discovering and self-creating to do.

I bring all this up because this paper is about self-awareness, specifically about authoritarians' *lack* of it, and I want to avoid a holier-than-thou posture. My wife, children, colleagues, students, golfing buddies and various editors have all gleefully joined Chris Argyris in helping me realize unpleasant facts about myself--with much left to be done, apparently. If you have similarly been badgered and whipped toward self-knowledge, you know we can be pretty good at inflating our strengths and dismissing our failings. Authoritarians turn out to be *very* good at these things, but I suspect that everything I shall say about them applies widely.

When I say "authoritarians," I am speaking of persons who score relatively highly on the Right-Wing Authoritarianism ("RWA") scale. This attitude survey measures sentiments of authoritarian submission.

Author's info: Correspondence should be sent to: Bob Altemeyer, Dept. of Psychology, U. of Manitoba, 190 Dysart Rd., Winnipeg, Manitoba, R3T 2N2 Canada

North American Journal of Psychology, 1999, Vol. 1, No. 2, 157-164.

© NAJP

authoritarian aggression and conventionalism, and seems to identify those who could carry a dictator to power in a democracy (Altemeyer, 1996). Research over the years has found that --relative to others-- these "authoritarian followers" tend to:[1]

Accept unfair and illegal abuses of power by government authorities.
Trust authorities too much.
Be punitive and hostile toward persons when they can attack them in the name of authority.
Be prejudiced against people on racial, ethnic, nationalistic, and sexual orientation grounds.
Volunteer to help the government persecute almost anyone.
Conform to the opinions of others.
Be fearful of a dangerous world.
Be highly self-righteous.
Make incorrect inferences from evidence.
Hold contradictory ideas.
Uncritically accept insufficient evidence that supports their beliefs.
Uncritically trust people who tell them what they want to believe.
Speak out of "both sides of their mouths" and be hypocrites.
Help cause and inflame intergroup conflict.
Believe they have no personal failings.
Easily erase guilt over their misdeeds.
Be dogmatic.

As you can tell from the items toward the end of this list, right-wing authoritarians do not have well-integrated minds. If, as Ralph Waldo Emerson is frequently *mis*quoted as saying, "Consistency is the hobgoblin of little minds," High RWAs are quite *un*hobgoblined.[2] Basically, they seem relatively uninclined to examine ideas, including their own (Altemeyer, 1996, p. 99-100; p. 122). They tend to "yea-say", and have trouble determining, on their own, that a conclusion is false (Altemeyer, 1996, p. 62-63; p. 95). They use a wealth of double standards in their thinking. For example, they would insist on "majority rights" when it comes to teaching Christianity in public schools when they are in the majority, but on "minority rights" when they are in the minority in a nonchristian society (Altemeyer, 1996, p. 115-117). They are quite capable of endorsing, *within the same minute*, contradictory ideas such as, "Parents should first of all be firm and uncompromising with their children; spare the rod and spoil the child" *and* "Parents should first of all be gentle and tender with their children" (Altemeyer, 1996, p. 96-99). They have very different standards for evidence regarding cherished beliefs than for non-cherished beliefs (e.g.

they believe a fallen wall at ancient Jericho proves that the Biblical story of Joshua and the horns is true) (Altemeyer, 1996, p. 101-104). They will cry "Censorship!" when school boards and courts deny creationism a place in biology courses; but they would run the censor out of ink if they had control over education, libraries, the media, and so on (Altemeyer, 1998, p. 89-90).

High RWAs also lack self-insight. If you describe right-wing authoritarianism to a group of people and ask each person how authoritarian s/he is, Low RWAs usually know they are Lows, and Moderates usually know they are Moderates. But High RWAs seldom realize they will score in the upper end of the distribution (Altemeyer, 1987, p. 312-317). If you tell people about authoritarianism, including the part about authoritarians being aggressive when backed by authority, and then ask them how willing they would be to help the federal government eliminate authoritarians, then-- you guessed it-- High RWAs will be more willing to volunteer than others, to hunt themselves down (Altemeyer, 1996, p. 30).

And yet, compared with most people, they think their minds are models of rationality and self-understanding. When I have asked them to write down, anonymously, things they do not like to admit about themselves to *themselves*, they frequently say no such thing exists (Altemeyer, 1996, p. 137-139). It is part of their hallmark self-righteousness: these potential Storm Troopers and members of the Storm Troopers Auxiliary routinely say, when you ask them, that they are morally superior to the rest of the citizenry.

A Systematic Measurement of Authoritarian Self-Awareness

High RWAs have some awareness of themselves, of course. They know they are more religious than most of the population. They also sense they are relatively hostile towards groups for whom, they think, there is social support for hostility, such as homosexuals, religious cults and pornographers (Altemeyer, 1987, p. 188-189). How much more do they realize? In 1997 I compiled a list of established High RWA findings, and asked university students to what extent each behavior was true of them. This led to the 20 items shown in Table 1, all of which concern well-established and usually appreciable (around .50) RWA scale correlates. The items are answered on a -4 ("Very Strongly Disagree") to +4 ("Very Strongly Agree") basis. You will notice that half the items are worded in an ego-enhancing, self-esteem-reinforcing way, where the pleasant answer is "Agree." Ego/Self-defense promotes a "Disagree" to the other half of the items.

I administered these items to 350 University of Manitoba introductory psychology students in November 1997, and to 373 parents of such students in January 1998, in a booklet that also contained the RWA scale. The

TABLE 1 Twenty Items About High RWA characteristics

1. I would never accept illegal abuses of power by government authorities. (-.02) [-.05]
2. A lot of my ideas are inconsistent and even contradict one another sometimes.* (.08) [.02]
3. I reason things out well. I seldom make the wrong inferences from facts. (.04) [-.07]
4. Compared with most people, I am self-righteous and think I am morally better than most.* (-.09) [-.07]
5. I have a lot of hostility boiling away inside of me, waiting for a "legitimate" excuse to let it all out.* (-.02) [-.01]
6. I have a lot of integrity in my thinking and behavior. (-.04) [-.03]
7. I tend to be dogmatic (more absolutely certain my opinions are right) than most people are.* (-.09) [-.09]
8. I am NOT the sort of person who would follow someone inflaming conflicts in our society. (.23) [.14]
9. I sometimes speak out of both sides of my mouth, using one argument on one occasion, and then its opposite on another occasion when it suits my purpose.* (-.03) [-.06]
10. I have thought carefully about matters and adopted my beliefs after examining the alternatives. (-.02) [-.05]
11. I could never become a Nazi-type person, or support a Nazi-type group. (-.03) [-.05]
12. I tend to automatically trust people who tell me what I want to hear.* (-.10) [-.02]
13. I really have no failings I am reluctant to think about; I squarely face the truth about myself, whatever it is. (.03) [.01]
14. I tend to trust authorities way too much.* (-.16) [-.02]
15. I am NOT prejudiced against blacks, Jews, Aboriginals, Asians, or other such minorities. (-.16) [-.12]
16. If I had been raised in a very different family, I would probably believe very different things.* (.01) [-.07]
17. I require as much evidence in support of a conclusion I like as I demand for a conclusion I dislike. (.02) [.02]
18. I stand firm on my opinions and beliefs, regardless of what others think. (.04) [.07]
19. I would be likely to help the government if it persecuted vulnerable groups.* (-.22) [.04]
20. I am easily panicked.* (-.02) [-.06]

Note: * - indicates an ego/self-threatening behavior, for which the scoring key was reversed. Thus all items were scored so that the enhancing/defending response g a higher score. Numbers in parentheses represent the RWA scale correlations with responses among 350 university students. Those in brackets represent RWA scale correlations among 373 parents of such students.

numbers in parentheses in Table 1 represent the correlation between RWA scores and responses to each item among the students. The figures in brackets show the corresponding correlations among the parents. All participants answered anonymously.

Predictably, responses tended to be ego-enhancing. But what should have happened if the authoritarians had self-insight? Since all 20 items concern behaviors where right-wing authoritarians tend to act poorly, we should find significant *negative* correlations if, relative to Low RWAs, High RWAs said they act badly. But even though it takes only a correlation of about .11 to reach statistical significance with these sample sizes, almost all the relationships plodded home nonsignificant. Even the few instances of accurate self-description (Item 14 concerning trusting authorities, Item15 concerning prejudice against minorities and Item 19 concerning helping the government persecute vulnerable minorities) fall far short of the empirical relationships, which have usually landed in the .40-.50 range (Altemeyer, 1996, p. 24-25, 29-30). Thus High RWAs seem to believe, in every single instance, that they think and act much better than they actually do.

DISCUSSION

One might immediately interpret these findings as simply the result of a super-charged social desirability motivation. I have no doubts that High RWAs want to present a wholesome image of themselves to others. Make that, "...greatly want...." But in these studies they were answering anonymously. "Others" would not know whose image was sparkling before them. So I think we are dealing here more with fooling one's self than with impressing others.[3]

It is not easy to demonstrate that people are trying to fool themselves, for we do not know what they *really* know. But several findings support the conclusion that authoritarians run away from unpleasant truths about themselves. I once did an experiment in which I gave former student participants false feedback about the results of a self-esteem test they had taken (Altemeyer, 1996, p. 139-141). I started by saying this self-esteem scale was simply marvelous: high scorers were likely to have wonderful lives, and low scorers would likely crash in flames. Then I passed out individualized feedback sheets giving each student either a very high or a very low score (supposedly) on the self-esteem scale. I said I would bring a summary of the evidence supporting the validity of the self-esteem scale to their next class, and asked persons who wanted a copy of this evidence to indicate so (anonymously). About two-thirds of the Low RWAs wanted the feedback, whether they had gotten good news or bad. Among the Highs, 73% who had gotten good news also asked for a copy of the feedback, but only 47% of the Bad News Authoritarians wanted it.

I have also asked persons who had filled out my ethnocentrism scale if they wanted feedback should they turn out to be relatively unprejudiced, or relatively prejudiced (Altemeyer, 1996, p. 141-142). Again, most Low RWAs wanted the feedback no matter what it was. But High RWAs were significantly more likely to want news that they were *un*prejudiced, than to want feedback that they were prejudiced. So while right-wing authoritarians may insist they face all their faults squarely, experimental evidence indicates otherwise. Most people may want to run away from unpleasant truths about themselves, but High RWAs seem to run faster and farther. If they really believe they are perfectly honest with themselves, that belief itself also counts as a self-deception.

"Somewhy" right-wing authoritarians are blind to themselves, compared with others. What why? Three explanations leap to mind. To begin with, it probably reflects the way they were raised. In general, High RWAs were not taught to figure things out for themselves, but instead to copy what their authorities believed. Authoritarians can think critically when motivated (Altemeyer, 1996, p. 326-7), but as noted earlier, on their own they tend to accept evidence uncritically that tells them their ideas are true, and to trust too easily others who tell them what they want to believe. Self-understanding requires critical analysis, and High RWAs were not raised to analyze so much as to memorize.

Raised with Truth already in hand, authoritarians then tend to surround themselves (more than most people do) with others of the same viewpoints who will consensually validate their opinions (Newcomb, 1961). A good example of this popped up when university students were asked what they had done earlier in their lives when questions about religion had arisen in their minds: Is there really a God? Is there really a heaven? Why do tornados sometimes destroy churches? (Altemeyer & Hunsberger, 1997, p. 17-19). Low RWAs reported seeking answers more equally from nonreligious versus religious sources than did High RWAs, who were much more likely to consult their parents, talk with friends of the same religion, read the Bible and so on). For a related example, High RWAs have recently been found to say they would prefer a job where they worked with persons from their own religion, and that Christians should avoid having contact with nonchristian religions. When you surround yourself with persons who tell you, explicitly and implicitly, that you are right and good and superior, it considerably dampens any tendency to discover personal failings. It also makes it hard for you to discover you are relatively prejudiced, for example, if prejudice is fairly common in your reference group.

Underlying all this one senses a certain level of fear. High RWAs tend to be fearful people, and they may be just as afraid of discovering unpleasant truths about themselves as they are of "different" people and a dangerous world. Yet to their credit most authoritarians, when told they scored highly on the RWA scale, wished they had scored lower, in the "normal" range (Altemeyer 1987, p. 316). If all we have been saying is true, it would shock them considerably to learn they are not as wonderful as they think they are. High RWAs may constitute a "goldmine" for researchers interested in studying self-deception and psychodynamic defensiveness. But we must recognize that the design of many of these studies, because they focused on shortcomings in High RWAs, would not have revealed a lack of self-awareness in *Lows*. Unauthoritarian persons may well have their own personal blind spots, defenses, and "white-outs." The problem in testing this thus far has been that Low RWAs have usually behaved rather admirably in experiments (Altemeyer 1996, p. 302). They have shown much more integrity, consistency and fairness than Highs did. They also were much more willing to face bad news about themselves, and to write down things about themselves they did not like to admit. Still, a vigorous research program on Low RWAs might find different personal failures, yet similarly white-washed self-concepts, as we have found in authoritarians.

REFERENCES

Altemeyer, B. (1987). *Enemies of Freedom: Understanding Right-Wing Authoritarianism.* San Francisco: Jossey-Bass.

Altemeyer, B. (1996). *The Authoritarian Specter.* Cambridge, MA: Harvard University Press.

Altemeyer, B. (1998). The Other "Authoritarian Personality." In Zanna, M. (Ed.), *Advances in Experimental Social Psychology. 30,* 47-92. San Diego: Academic Press.

Altemeyer, B. & Hunsberger, B. (1997). *Amazing Conversions: Why Some Turn to Faith and Others Abandon Religion.* Amherst, NY: Prometheus Press.

Newcomb, T.M. (1961). *The Acquaintance Process.* New York: Holt, Rinehart, and Winston.

Endnotes

1. A more complete listing of the findings regarding right-wing authoritarians through 1995 is given on pages 300-302 of Altemeyer, 1996.
2. In his essay, "Self-Reliance," Emerson wrote "A foolish consistency is the hobgoblin of little minds," which has a different spin on it than the usual quotation. Also, someone who actually believed consistency was the sign of a little mind would presumably feel perfectly correct in saying, with his next breath, it was the sign of a great mind (And once there, the matter would be closed.).
3. I have tested the correlation between RWA scale scores and such measures as the Marlowe-Crowne Social Desirability scale (Crowne & Marlowe, 1964) and Paulhus' various Impression Management, Self-Deceptive Enhancement and Denial scales (e.g. Paulhus & Reid, 1991) (Altemeyer, 1996, p. 44; 1998, p. 81). The correlations have ranged from -.02 to .23. Since we know from many experiments that authoritarians are highly conventional and highly defensive, these low correlations would seem to raise questions about the validity of the social desirability scales.

Training in Psychology and Belief in Recovered Memory Scenarios

Lori R. Van Wallendael
University of North Carolina at Charlotte

Participants with varying amounts of psychology training were asked to indicate their degrees of belief in a series of recovered memory scenarios. Across all expertise levels, participants expressed greater belief in recovered memories of being lost in a shopping mall than in memories of sexual abuse or satanic ritual participation. Spontaneously recovered memories were most believable to participants with greater psychology training, whereas psychology novices expressed greater degrees of belief in memories recovered under hypnotherapy. Participants with greater psychology training expressed greater skepticism about repressed memories, across scenario types.

The debate over the existence and accuracy of repressed/recovered memories has become one of the most contentious controversies in recent psychological history. If one believes the extremists on either side of the debate, then our country is either in the midst of an epidemic of repressed memories of physical and sexual abuse--or an epidemic of false memories implanted by unscrupulous therapists. Court cases have been won and lost on the testimony of psychological experts (see, for examples, Ofshe & Watters, 1994) who argue the reality of "recovered" or "delayed" memory before juries who may know little about the psychological theory and research that is relevant.

Within the research community, the past few years have seen a number of calls for a more reasoned approach. Pope (1996), for example, persuasively argued that the creation of false memories in the laboratory does not imply the truth (or falsehood) of any particular claim of repression and recovered memory in the real world. But if we cannot label all such claims as either "real repressed memories" or "false memories," how do we judge the believability of stories of repression and recovery?

From a decision-making standpoint, belief in any claim represents a judgment supported (or refuted) by varying types of evidence. Consider, for example, television actress Roseanne Barr's well publicized claim of recovered memory of childhood abuse (Bane, 1991). Among other

---

Author's info: Correspondence should be sent to : Dr. Lori Van Wallendael, Dept. of Psychology, UNC Charlotte, Charlotte, NC 28223

North American Journal of Psychology, 1999, Vol. 1, No. 2, 165-174
© NAJP

incidents, Roseanne claims to have recovered the memory of being in her crib, around the age of two, and having her mother push a pillow into her face. The knowledgeable reader who judges the believability of such a story might consider a number of factors: How long was the memory inaccessible before it resurfaced? Under what conditions was the memory recovered? What is the base rate of such parental abuse in our society--how often do such things happen? What is the likelihood of any human being having an accurate memory for an event that occurred at age two, given what we know of childhood amnesia? Estimates of the answers to these questions should be integrated into a reasoned judgment of the believability of Roseanne's claim.

The peculiarities of memory, however, may not be well known to the average citizen. Kassin's studies of expert and novice opinion on statements about eyewitness accuracy (Kassin & Barndollar, 1992; Kassin, Ellsworth, & Smith, 1989) suggest that phenomena of memory are not well publicized outside of academic circles; statements such as "Hypnosis does not facilitate the retrieval of an eyewitness's memory" and "The rate of memory loss for an event is greatest right after the event and then levels off over time" achieved high rates of agreement from memory experts but much less agreement from randomly sampled adults. It is likely that psychological knowledge relevant to repressed memory claims may also be unfamiliar to the general public, whose knowledge of the area may come primarily from television talk shows.

To date, only a few studies have examined laypersons' beliefs about repressed memory. Loftus, Weingardt, and Hoffman (1993) asked participants to give their opinions about a case brought by a 20-year-old woman who accused her father of sexually assaulting her when she was 10 years old. In one version of the case, the woman had repressed the memory for 10 years, and only recently recovered it under therapy; in another version of the case, the woman had always remembered the incident, but only decided to file charges after therapy. Participants were more skeptical of the repressed memory claim than of the case involving no repression; however, even in the repressed memory version of the case, the majority of participants believed that the woman's claims were true. Schutte (1994) asked jury-eligible students to respond to a case involving the repressed memory of a 26-year-old woman for abuse that had occurred between the ages of 6 months and 5 years; gender, religiosity, and authoritarianism influenced the verdicts, with 28.3% of the verdicts favoring the plaintiff. Golding, Sego, Sanchez, and Hasemann (1995) asked mock jurors to decide both civil and criminal cases involving the sexual assault of a 6-year-old girl. They compared three conditions: one in which the child reported the assault in the same year in which it occurred, one in which the alleged victim reported the assault as an adult after repressing the memory for 20 years, and one in which the alleged victim remembered the assault but failed to report it until 20 years later. The child victim was believed to a greater extent than either of the delayed-report adult accusations. However, even in the repressed memory condition, civil verdicts favored the plaintiff 41% of the time, and guilty verdicts were handed down 37% of the time in the criminal case.

The current study was designed to examine the role of psychology training in judgments of the believability of recovered memory scenarios. Six groups of participants were recruited, differing in their presumed psychological expertise: randomly selected jury-eligible adults, college students enrolled in an introductory psychology class, undergraduate psychology majors near the completion of their degree, graduate students enrolled in a clinical-community psychology master's degree program, university faculty from departments other than psychology, and randomly sampled members of the American Psychological Society. Participants rated the believability of scenarios that varied the nature of the event remembered and the circumstances under which the alleged memory recovery occurred. It was expected that the groups with greater psychological training would show more skepticism regarding recovered memories in all conditions. It was also expected that groups with greater psychological training would be more responsive to the recovery circumstances -- specifically, showing greater skepticism regarding memories recovered using suggestive techniques such as hypnosis--than participants from the general population.

METHOD

Participants

A total of 267 participants were recruited for this study. Surveys were mailed to randomly selected, Ph.D.-holding members of the American Psychological Society, as listed in the 1994 membership directory. The American Psychological Society was selected as the population of interest because it serves primarily research psychologists rather than practicing clinicians; however, members of all represented psychological specializations were included in the sample. Of the 90 surveys mailed out, 33 were returned; their data make up the "expert" group. Another 107 participants were randomly sampled from the telephone directory of a medium-sized city in the southeastern United States; 60 of these people telephoned were willing to participate in the study and met the criteria to be considered "jury eligible," and their data comprise the "random sample" group. The remaining groups were recruited on the campus of a Southeastern university: 30 Ph.D.-holding faculty from departments other than psychology, 12 first- and second-year students enrolled in a masters program in clinical/community psychology, 45 senior undergraduate psychology majors enrolled in required seminar courses, and 87 undergraduates enrolled in an introductory psychology course who participated at the beginning of the semester.

All participants gave their informed consent to participate in the research, and were treated in accordance with the ethical guidelines established by the American Psychological Association.

Materials

Nine different scenarios were created, according to a 3 (event nature) x 3 (recovery circumstance) factorial design. Each scenario described a 25-year-old woman who claimed to have recovered a memory of an event which had happened to her at the age of 5. Each woman was reported to have totally repressed the memory for 20 years before recovering it. Three of the stories described the recovered memory of being lost in a shopping mall for over an hour; three described the memory of being sexually abused by a visiting uncle; and three described the memory of being forced to participate in a satanic ritual in a neighbor's basement. The three events were chosen because they were presumed to represent different base rates of occurrence in the general population, with the incident of being lost in a mall presumed to be the most common occurrence and the satanic ritual presumed to be the most uncommon.

The nine stories also differed in the circumstances surrounding the memory recovery. For three stories, the memory was recovered spontaneously upon the woman's visiting her home town for the first time in many years. Such circumstances were expected to be the most believable to experts, because they involved no outside interference or suggestion, and because they fall within the realm of context effects in encoding specificity theory (Tulving & Thomson, 1973). Another three stories involved the recovery of the repressed memory under hypnotherapy and administration of sodium amytal, techniques regarded as "dangerous" by false memory researchers (Ofshe & Watters, 1994; Mingay, 1987). The final three stories involved the recovery of the repressed memory after reading a self-help book and following its suggestions regarding visualization and imaginative reconstruction; these techniques are also frequently cited as "dangerous" by researchers (Ofshe & Watters, 1994). All stories were approximately 150 words in length. A sample story follows:

> Mary D. is 25 years old. Recently, Mary was undergoing therapy for mild depression. After several months of hypnosis and administrations of sodium amytal, Mary remembered an event from her childhood that she

> had completely forgotten. The event that Mary remembered was this: When she was about 5 years old, she was forced to take part in a Satanic ritual in her neighbors' basement. Her neighbor, Mrs. A., invited her to come inside for a glass of lemonade, then lured her into the basement and locked the door behind her. In the basement were about a dozen adults in red robes and masks. Mary was tied to a chair and forced to watch the sacrifice of a stray cat, whose heart was cut out and burned at an altar. Mrs. A warned Mary to never mention the ritual because her parents would be angry to hear that she had taken part. Mary had not once thought of this event in 20 years.

Following each story, these instructions were printed: "Based upon the story above, how likely do you think it is that this event actually happened to Mary when she was a child? (Circle a number on the scale below.)" Rating scales were numbered from 0 to 10, with 0 labeled as "definitely did not happen" and 10 labeled as "definitely did happen."

Design and procedure

Three forms of a questionnaire were created using a Latin square design. Each participant received one form which included three different stories, one from each of the event types and each of the recovery circumstances. Order of story presentation was also counterbalanced. For example, participants receiving Form A read the "lost in a mall" event, recovered spontaneously, followed by the "sexual abuse" event, recovered through hypnotherapy, and finally the "Satanic ritual" event, recovered after reading the self-help book. Other forms involved different combinations of the two independent variables, in different orders. Equal numbers of participants in each group received each form.

With the exception of the random adult group, all participants received the questionnaire in written form, either handed out in a classroom setting or sent to them in a mailing. All participants were instructed to take as much time as they needed to read the stories and rate their believability on the rating scales provided. The participants in the random adult group were contacted by telephone. Upon agreeing to participate, they were read each of the three stories on their form by a female research assistant, who was allowed to re-read portions of the stories if requested. The rating scale was explained verbally to the participants, who responded to each story by stating a number between 0 and 10 that best described their degree of belief in the story.

RESULTS

A Latin Square Analysis of Variance was used to analyze differences between groups and conditions. Across scenarios, expertise had a significant effect [F(5, 249) = 11.18, $p < .001$] on degree of belief, with APS members (*M* = 3.91, *S.D.* = 2.39) exhibiting less belief in recovered memory scenarios than clinical masters' students (*M* = 4.89, *S.D.* = 2.09), non-psychology Ph.D.s (*M* = 5.70, *S.D.* = 2.13), senior psychology undergraduates (*M* = 6.00, *S.D.* = 2.74), introductory psychology students (*M* = 6.30, *S.D.* = 2.73) or randomly sampled adults (*M* = 6.30, *S.D.* = 2.97).

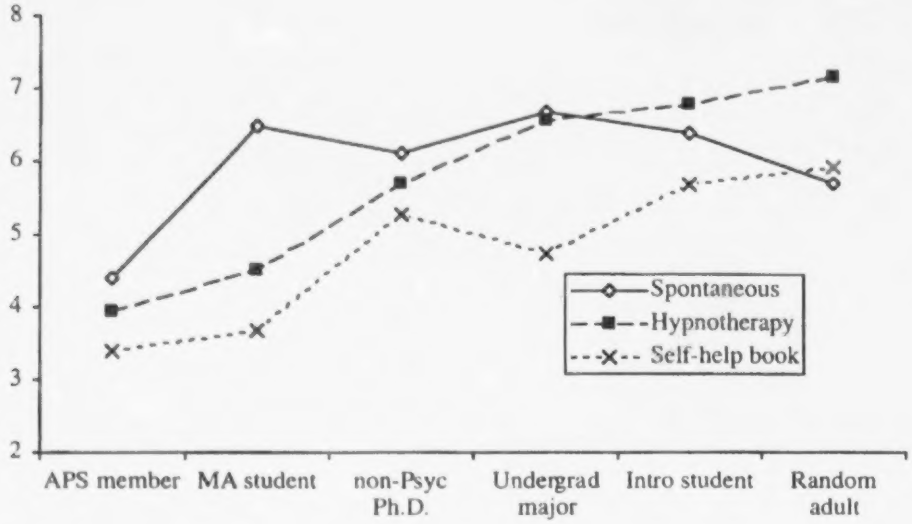


Figure One Mean belief ratings as a function of expertise level and circumstances of memory recovery

The nature of the recovered incident also played a significant role in determining belief. The "lost in a mall" story received higher belief ratings (*M* = 6.93, *S.D.* = 2.50) than either the "sexual abuse" (*M* = 5.74, *S.D.* = 2.72) or "satanic ritual" (*M* = 4.80, *S.D.* = 2.68) stories [F(2, 510) = 37.42, $p < .001$].

Recovery circumstances had a significant effect on belief ratings [F(2, 510) = 16.22, $p < .001$], but this effect was moderated by a significant interaction with expertise [F(10, 510) = 3.00, $p < .01$]. For the APS members, clinical graduate students, and non-psychology Ph.D.s, the spontaneously-retrieved memory was the most believable, followed by the memory retrieved under hypnotherapy and the memory retrieved while reading a self-help book. The senior psychology majors and the introductory psychology students gave roughly the same ratings to the spontaneous and hypnotherapy scenarios, and lower ratings to the self-help book. However, the randomly sampled adults found the hypnotherapy scenario to be the most believable, followed by the spontaneous and self-help scenarios. (See Figure 1.)

DISCUSSION

Psychology training clearly played a role in the judgment of believability of recovered memory stories. Not surprisingly, research psychologists were more skeptical of recovered memories across all scenario types. Their ratings indicate that they found almost all scenarios more likely to be untrue than true; all other groups found more of the scenarios more likely to be true than untrue. Of greater significance, however, is the finding that experts judged the importance of recovery circumstance in a qualitatively different way than novices did. Whereas experts found spontaneously recovered memories to be the most believable, presumably because such memories are less influenced by suggestion and more congruent with memory research, novices found these same spontaneously recovered memories to be the least believable. Such findings may have serious implications for juror understanding of criminal and civil cases involving recovered memories.

All groups expressed greater belief in recovered memories of being lost in a mall than in memories of sexual abuse or satanic ritual involvement. Similarly, Schutte (1994) found a greater percentage of verdicts for the plaintiff in repressed memory cases involving sexual abuse (34%) than satanic ritual abuse (23%), although his results were not statistically significant. Such results can be interpreted both optimistically and pessimistically from the standpoint of juror understanding of repressed memory issues. On the one hand, these results could be construed as a rational attention to differences in the base rates of the three scenarios used; incidents of lost children are probably more common in the real world than incidents of satanic abuse. However, it is ironic to note that the most believable scenario, across expertise levels, was also the one scenario involving an incident which has been implanted as a false memory in the laboratory (e.g., Loftus, 1997). Pezdek, Finger and Hodge (1997) have also shown that false memory implantation is more likely to be successfully accomplished for familiar scenarios rather than unfamiliar ones. Thus, the most believable scenario for jury-eligible citizens, the hypnotically-recovered memory of being lost in a mall, is also perhaps the most likely scenario to be a false memory!

Additional research in this area is certainly warranted. The return rate for questionnaires mailed to the APS "expert" sample was less than 50%; thus, caution is advised in the generalization of this data to research psychologists at large. Further, the need to use a combination of methods (mail surveys, phone interviews, and classroom handouts) may have confounded the present results. Due to the use of brief vignettes in this study, actual generalizability to the courtroom is unknown. Because of the focus on general believability of repressed memory claims (including some claims which were deemed unlikely to lead to criminal or civil charges), the current study did not use a trial format for its vignettes, and thus further study of the effect of memory recovery methods on civil and criminal verdicts is needed. Comparisons of other groups of participants, such as practicing clinicians of varying backgrounds or legal professionals, could have important implications. In addition, the effect of other believability factors (such as age at the time of the remembered incident, or the length of time that the memory was repressed) should be explored further, to determine where juror education is most warranted.

REFERENCES

Bane, V. (1991, October 7). A star cries incest. *People*, 84-88.

Golding, J. M., Sego, S. A., Sanchez, R. P., & Hasemann, D. (1995). The believability of repressed memories. *Law and Human Behavior, 19*, 569-592.

Kassin, S. M., & Barndollar, K. A. (1992). The psychology of eyewitness testimony: A comparison of experts and prospective jurors. *Journal of Applied Social Psychology, 22*, 1241-1249.

Kassin, S. M., Ellsworth, P. C., & Smith, V. L. (1989). The "general acceptance" of psychological research on eyewitness testimony. *American Psychologist, 44*, 1089-1098.

Loftus, E. F. (1997). Creating childhood memories. *Applied Cognitive Psychology, 11*, 75-86.

Loftus, E. F., Weingardt, K., & Hoffman, H. (1993). Sleeping memories on trial: Reactions to memories that were previously repressed. *Expert Evidence, 2*, 51-59.

Mingay, D. J. (1987). The effect of hypnosis on eyewitness memory: Reconciling forensic claims and research findings. *Applied Psychology: An International Review, 36*, 163-183.

Ofshe, R., & Watters, E. (1994). *Making monsters: False memories, psychotherapy, and sexual hysteria.* New York: Charles Scribner's Sons.

Pezdek, K., Finger, K., & Hodge, D. (1997). Planting false childhood memories: The role of event plausibility. *Psychological Science, 8*, 437-441.

Pope, K. S. (1996). Memory, abuse, and science: Questioning claims about the false memory syndrome epidemic. *American Psychologist, 51*, 957-974.

Schutte, J. W. (1994). Repressed memory lawsuits: Potential verdict predictors. *Behavioral Sciences and the Law, 12*, 409-416.

Tulving, E., & Thomson, D. M. (1973). Encoding specificity and retrieval processes in episodic memory. *Psychological Review, 80*, 352-73.

Author note

I would like to thank Karmen Mills for her assistance in gathering the data for this experiment. Portions of these results were presented at the meeting of the Society for Judgment and Decision Making in Chicago, November 3, 1996.

Electronic mail may be sent to LRVANWAL@email.uncc.edu.

The Effects of Student Academic Presentation on Perceptions of Gender and Sociability

Terell P. Lasane, Peter N. Sweigard, Alexander M. Czopp, William L. Howard
St. Mary's College of Maryland

Myron J. Burns
Tennessee State University

We hypothesized that student academic self-presentation style would be related to perceivers' evaluation of a hypothetical target's masculinity, femininity, and social attractiveness/sociability. One hundred eighteen college students read a vignette describing a student who adopted one of two types of academic self-presentation styles: Organized/conscientious or disorganized/unconscientious. Participants then rated the target on dimensions corresponding to masculinity, femininity, and sociability using several items sampled from a number of gender-role inventories. ANOVA results showed that participants rated the target who was academically organized as being higher on femininity, higher on masculinity, and lower on sociability than the disorganized target. We discussed these results in light of the orthogonality of masculinity and femininity, the facilitative and inhibitory aspects of masculinity ideology on student goal-setting behavior, and gender ideology as a potential barrier to optimal student achievement.

Gender, the psychological meaning that societies attach to maleness and femaleness, is an integral part of individual self-concept. Through gender-role socialization, individuals learn to conform to a normative set of culturally defined meanings of gender-appropriate behavior.
Individuals who do not fit the prescriptive norms for gender-appropriate behavior, or who behave aschematically with respect to gender, often receive negative social evaluations from others in society (Maccoby, 1987). According to gender-schema theory, this negative social evaluation emerges because of the discrepancy between the actual and

---

Author info: Correspondence should be sent to: Terell Lasane, Dept. of Psychology, St. Mary's College of Maryland, St. Mary's City, MD 20686.

North American Journal of Psychology, 1999, Vol. 1, No. 2, 173-188.
©NAJP

expected behavior of the target (Bem, 1981). While masculine women have been subject to a fair share of gender evaluation bias, the preponderance of gender research suggests that men who violate prescriptive norms of masculinity experience a greater degree of social punishment than women who violate these norms (Feinman, 1981; Lamb & Roopnarine, 1979).

The socialization process constitutes a significant part of the internalized notions individuals acquire about gender-appropriate behavior. Symbolic interaction theory (Gergen, 1985) describes the "looking-glass self" process whereby individuals internalize the roles that have been scripted for them through society's symbols, and behave accordingly. The theory postulates that as social perceivers, humans are adept at uncovering the reflected appraisals that are transmitted by others in their social environments. As a result of the strong prescriptive norms guiding appropriate behavior, individuals adopt behavioral strategies that help them to present themselves in a manner that maximizes positive impression management across a number of social dimensions (Tedeschi, 1981). Gender is one dimension in which individuals endeavor to present an image of the self that will provide social rewards and avoid social punishments.

Gender role-strain theory (Pleck, 1981; 1995) describes a process whereby males may experience chronic levels of psychological distress and discomfort due to long-term failure to meet culturally defined standards of male behavior. Pleck (1995) recently introduced *masculinity ideology* as the core element of this gender role-strain. Masculinity ideology refers to the broad cluster of internalized attributes that culturally, socially, and psychologically define maleness in a given society.

Recent research suggests that gender is a dimension on which social inferences are based. Berndt and Heller (1986) examined the social perceptions of elementary students and college students on a hypothetical target who behaved in a gender-consistent versus gender-inconsistent manner. Their results revealed that social perceivers judge the future behavior of targets as a function of whether or not these targets behaved gender schematically. Moreover, the target's social attractiveness was affected by whether or not the target behaved in accord with prescriptive gender norms. Their results suggest that the pervasive influence of gender-role stereotypes is an important moderator of student sex-role behavior. They also extend the findings of a substantial literature that demonstrate the social liability of students who behave gender aschematically in academic settings (Costrich, Feinstein, Kidder, Marecek, & Pascale, 1975; Fagot & Patterson, 1969). Based on looking-glass theories of self-construction, it seems likely that students adopt gender-specific self-presentation strategies in order to receive social rewards and to avoid social punishments.

In the present study, we were interested in examining how the effects of the masculine strategic self-presentation that grows out of gender role strain might be involved in the process of student goal-setting behaviors. We were specifically concerned with identifying some of the social perceptual processes that reward and reinforce negative academic behaviors of individuals whose behavior may be guided by gender role norms.

Strategic self-presentation involves individuals' deliberate behavioral attempts to monitor the presentation of a public social self in order to gain social rewards or to create a public self that is congruent with self-perceptions (Baumeister, 1982). Given the traditionally high value placed on masculine behaviors in this society, particularly for males, researchers have asserted that the well-defined gender schemas that people have internalized may mediate self-presentation strategies that are used with regard to gender--one of the most salient aspects of self-concept.

In the academic domain, this self-presentation may involve behaviors that serve to separate academic goal-setting from the masculine self-concept. The culture of academic environments fosters a subtle script regarding the appropriateness of studiousness and academic conscientiousness as a public aspect of self-concept.

The feminine gender role, generally described as the expressive role orientation, is partially characterized by self-disclosure of fears and insecurities, passivity, emotionality, conformity, and weakness (Best & Williams, 1993). Students who present themselves as structured and conscientious in academic goal-setting, we reason, would be more likely associated with this cluster of traits than with aspects of masculine orientation characterized by assertiveness, control, independence, competitiveness, and calm reserve in the face of stress.

Our reasoning for this proposition is based on notions of hypermasculine posturing described above and from a theory of "cool pose" offered by Majors and Billison (1992). Cool pose theory delineates a cluster of compulsive masculine self-presentation behaviors that individuals use to show calm, invulnerable reserve in a broad range of social situations. As a part of "cool pose," individuals do not allow social perceivers to observe their vulnerabilities, anxieties, or fear of failure. Majors and Billison (1992) present this theory to describe the unique gender experience of African-American males, but other researchers have adopted the more generic elements of the theory to describe masculinity ideology in our culture (Doss & Hopkins, 1998;

Pleck, 1995). We reasoned that the self-presentation style of a time-structured, conscientious student would be perceived as less congruent with traditional masculine gender roles than a student who self presents as being less ostensibly concerned with academic goal-setting behaviors.

Previous research has suggested that masculine socialization may foster a disidentification with academic behaviors due to a history of gender-role socialization that contributes to the notion that school is a feminine domain through all levels of education. Considerable evidence suggests, for instance, that young boys receive social rewards for pronounced masculine behaviors that interfere with academic goal-setting and instrumental classroom behavior (Pfeifer & Sedlacek, 1974; Silverman & Dinitz, 1974).

As early as elementary school, males learn to equate the academic world to femininity. Elementary school teachers consistently reward behavior that is traditionally feminine and punish behavior that is traditionally masculine (Kagan, 1964; Richardson, 1981). Additionally, males quickly learn to understand the social rewards associated with exhibiting masculine behaviors and the derogatory name-calling and peer disapproval frequently associated with feminine behaviors (Adler, Kless, & Adler, 1991; Bernard, 1979; Bernard, Elsworth, Keefauver, & Naylor, 1981; Silvern, 1978). Research suggests that this "feminization of schooling" is somewhat reduced by high school when independence, autonomy, and confidence (all stereotypically masculine characteristics) are highly regarded by teachers, especially in math and science courses (Eccles, 1990). Nonetheless, the masculine posturing that follows from masculinity ideology may continue to compromise academic achievement throughout students' educational careers. Thus, males may be especially vulnerable to experiencing a conflict that is consistent with gender role-strain theory: They want to achieve in school while maintaining a socially desirable masculine self-presentation.

Recent research has provided some support for the existence of these competing aspects of the masculine self-concept in college students. Doss and Hopkins (1998) have recently measured masculinity ideology in a culturally diverse sample. Using a Multicultural Masculinity Ideology Scale, they reported two factors of masculinity ideology that are robust across samples of White-Americans, African-Americans, and Chileans: Hypermasculine Posturing and Achievement. The Achievement factor, characterized by persistence, autonomy, confidence, and resiliency, produces a set of self-presentation strategies that would likely render positive outcomes within academic environments. In contrast to this, Hypermasculine Posturing involves interpersonal insensitivity, sensation-seeking, and toughness. These traits and behavioral tendencies would likely not serve students well. The behaviors that comprise this stronger factor may produce self-presentation styles that undermine academic behaviors. In sum, the salience of gender attributes to student self-concept may therefore mediate a number of self-presentation behaviors that both facilitate and inhibit optimal academic achievement.

Recently, Lasane, Czopp, Howard, and Sweigard (1999) conducted research that supports the negative relationship between hypermasculine posturing and academic goal-setting among college students. These authors hypothesized that academic goal-setting behaviors, as measured by a behavioral checklist, would be negatively correlated with hypermasculine traits, as measured by a hypermasculine inventory. Results confirmed the hypothesis. These results provided further support for the assertion that the masculine ideology present in college settings may perpetuate an environment that discourages individuals concerned with "maintaining masculine face" from making a public self-presentation of academic concern.

In addition, Czopp, Lasane, Sweigard, Bradshaw, and Hammer (1998) found compelling support for the link between hypermasculine strategic self-presentation and the gender-role percepts of a hypothetical target. They manipulated the interpersonal style of a target student (cool/hypermasculine versus non-hypermasculine control) and examined its effect on the social perception of the target's academic competence and social attractiveness. In support of the hypothesis that masculine self-presentation is a "double-edged sword" in academic contexts, the researchers found that hypermasculine self-presentation style predicted a perception of the target as less academically successful but more socially attractive than the non-hypermasculine control target.

In the present study, we extended the research above by exploring the link between self-presentation strategies and social perceptions of a hypothetical student target. We reasoned that the depicted target's self-presentation strategies that incorporate internalized gender roles would be related to social perceptions of a target's specific academic behavioral style. The predicted effect would support the conceptualization of academic goal-setting as a "feminine" undertaking. Accordingly, we examined the impact of vignettes depicting academic self-presentation style on the perceptions of a hypothetical target's social attractiveness and gender role. We specifically hypothesized that an ambiguous target's depicted self-presentation style as an academically conscientious student would be related to a social perception of higher femininity and lower sociability than an experimental target whose depicted self presentation is less academically conscientious.

METHOD

Participants

A total of 118 introductory psychology students (77.1% female, 21.2% male, 1.7% unspecified), with a mean age of 23.8 (SD=6.51) who attended either an Eastern liberal arts college or a Southern university participated in the study for course credit. The sample was diverse (38.1% White, 55.5% African-American, 1.7% Asian-American, .8% Latino, .8% Multiracial , and 3.4% Other or Missing).

Measures

We designed an instrument to measure social perceptions using trait adjectives assessing the extent to which subjects rated a characteristically organized, studious person, or an academically unorganized, socially-oriented individual on levels of masculinity and femininity. The trait adjectives used in the social-perception task of the target contained items sampled from standard gender-role inventories that are consistent with the traditional notions of masculinity and femininity in this society (Best & Williams, 1993; Helmreich & Spence, 1974). To measure masculinity, participants evaluated the target on the following traits/behaviors: independent, assertive, works well under pressure, adventurous, masculine, and makes decisions easily (alpha=.69). In order to measure femininity, participants evaluated the target on the following dimensions: expressive, emotional, kind, yielding, feminine, and loyal (alpha=.46) The composite measures formed from these items were scored so that the higher score represented a higher level of gender-role orientation.

The social behavior of the target was measured using a number of additional trait items that deal with the level and nature of the individual's social interactions. Participants evaluated the target on the following social dimensions: attractive, boring, vain, high self-esteem, social, humorous, and popular (alpha=.79). All scales were rated from 1 to 7, from uncharacteristic to characteristic.

Procedure

Subjects first read one of two forms of parallel vignettes describing either an academically organized or academically disorganized "Person X". Specific descriptions of behaviors and traits associated with different levels of academic success were acquired from the Behavioral Preference Checklist an instrument designed to evaluate academically relevant goal-setting. Manipulation checks assessing the reliability of the successful versus unsuccessful condition revealed that this manipulation was successful. All participants were treated in accordance with APA standards of ethical conduct (American Psychological Association, 1992).

Participants believed that they would be participating in an impression-formation exercise aimed at discovering how people form first impressions of others based on limited information. Participants were randomly assigned to one of the two self-presentation conditions of a hypothetical target described as Person X: academically time-structured and academically disorganized. The following vignettes were used:

Depicted Self-Presentation as Academically Organized

> Person X is a college student who enjoys attending school. This student tends to know a lot of people and spends a fair amount of time socializing with a close network of friends. On a typical weekend, this student makes sure to complete all assignments before engaging in social activities. This student doesn't go to many parties. Others find this person pleasant to talk to. During the week, Person X keeps an organized schedule for classes and activities, is seldom distracted from initial plans, and finds time for leisure reading. This person will most likely graduate in the scheduled four years and is certain about future plans.

Depicted Self-Presentation as Academically Disorganized

> Person X is a college student who enjoys attending school. This student tends to know a lot of people on campus and spends a fair amount of time socializing with many different people. On a typical weekend, this student is more concerned with having a good time than completing assignments. Person X goes to a lot of parties, and others find this person pleasant to talk to. During the week, Person X has difficulty keeping an organized schedule for classes and activities, is easily distracted from initial plans, and only reads required assignments. This person may not graduate in four years and is uncertain about future plans.

After reading the brief description of "Person X", participants were asked to rate the target individual on 24 adjectives or short phrases obtained from sex-role inventories and other investigations of gender characteristics. These trait dimensions were classified into one of the following *a priori* categories: masculinity, femininity, or social attractiveness.

Participants evaluated the target individual on the list of trait adjectives by responding to the following question: "How characteristic do you feel these traits are of the person just described in the vignette?" Participants indicated responses using a 7-point scale with 1 corresponding to "extremely uncharacteristic of the person described" and 7 corresponding to "extremely characteristic of the person described." Participants reported their age, sex, race, and grade point average. Following completion of the questionnaire, participants were thoroughly debriefed as to the researchers' specific hypotheses.

RESULTS

Manipulation Check

In order to ensure that our manipulation of the academic presentation style was successful, we examined the mean rankings of the students' motivation level on a 1 (very uncharacteristic) to 7 (very characteristic). The manipulation was successful. The student portrayed in a time-structured, organized way was considered to be a more highly motivated, academically successful student (M=6.38, SD=1.16) than one who self-presented in a more disorganized manner (M=2.87, SD=1.42), *F* (1, 116) =214.9, *p*<.001.

TABLE 1 Gender as a Function of Academic Presentation Style

	Masculine		Feminine	
Condition	M	SD	M	SD
Experimental	4.19**	0.76	4.11**	0.75
Control	4.69**	0.83	4.55**	1.09

Note. ***p* <.001

Effects of Target Self-Presentation Style on Gender

All traits were classifiable in a priori categories of masculinity and femininity. We formed composite dimensions of these intercorrelated scores on masculinity and femininity (described above) and conducted a MANOVA with self-presentation style as the between-subjects factor. Using Hotelling's trace criterion, we found that academic self-presentation style had a significant effect upon the social perception of the target's masculinity and femininity, *F* (2, 115)= 6.81, *p* < .001. Univariate ANOVAs explored the nature of these specific differences. The target who self-presented as an academically organized student was evaluated as being more masculine than the disorganized student, *F* (1, 116)=11.76, *p*<.001. Interestingly, the academically organized student was also regarded as more feminine than the disorganized student, *F* (1, 116)=6.64, *p*<.001.

Eight trait adjectives/behaviors were included in the impression-formation task to measure the perceived social attributes of the targets as a function of academic presentation style. Because the items included in the social-perception task did not load on a unitary factor, we considered the items separately in univariate tests of significance. Using Hotelling's trace criterion, we found that academic self-presentation style did affect how the target was perceived on a number of social traits and behaviors, F (8, 109) = 22.55, $p<.001$. Specifically, the academically organized student was perceived to differ from the disorganized student in the following respects: consumes less alcohol, is less attractive, is less boring, has higher self-esteem, is less humorous, is less popular, is less social, and is more vain. A summary of these results is presented in Table 2.

TABLE 2 Social Attractiveness as a Function of Academic Presentation Style

	Experimental		Control	
Trait	M	SD	M	SD
Attractive	4.22*	1.14	4.87*	1.71
Boring	3.62*	1.54	2.95*	2.16
High self-esteem	5.72**	1.27	4.78**	1.70
Humor	4.28**	1.35	5.48**	0.98
Popular	5.24**	1.47	6.2**	1.15
Social	5.48**	1.34	6.50**	1.10
Vain	3.40**	1.28	4.53**	1.47

Note. $*p < .05$, $**p < .01$

DISCUSSION

Results of this research supported the key hypotheses. The academically organized, conscientious student was rated higher on a composite index of femininity and lower on various aspects of sociability/social attractiveness. Additionally, the organized, conscientious student was perceived to be higher on a composite index of masculine traits. These results offer further support for the proposition that academic goal-setting may be considered a gendered activity that has both facilitative and inhibitory characteristics. These characteristics require further investigation in explorations of the achievement motivation of students vis-a-vis gender ideology percepts and self-presentation strategies.

The finding that an academically organized target was rated more feminine by the participant perceivers than the academically disorganized target offers partial support for the proposition that there may be some arryover of the subtle scripts of gender-role socialization from earlier education experiences that characterize school as a "girl's world." However, academically organized students were also rated as more masculine. Participants in this study, measured as predominantly androgynous (high on both masculinity and femininity by standardized self-report inventories) in their personal gender-role orientations (Lasane, 1997) still seem to be influenced by the gender ideology that is transmitted in society's symbols and in their social interactions. A student whose academic behaviors are consistent with ostensible concern over performance may imply a degree of evaluation anxiety and vulnerability that does not resonate with the "Cool Pose" and calm reserve of masculine socialization. These results are consistent with the work of Doss and Hopkins (1998), Czopp, Lasane, Sweigard, Bradshaw, and Hammer (1998), and Lasane, Czopp, Howard, and Sweigard (1999), described earlier.

The duality of maintaining masculine self-presentation and publicly demonstrating concern over academic performance may be a component of gender role-strain suggested by Pleck and others. This long-term strain may produce social perceptual biases about the level of investment, concern, and even aptitude of individuals who seem to be influenced by this subtle script of behavior. In academic contexts, students who self-present in this less conscientious manner may be denied opportunities for educational enhancement that may aid in completion of short-term and long-term goals. Continued self-presentation as academically indifferent could lead instructors and peers to perceive these students as unintelligent, or at the very least disinterested. These perceptions could potentially affect a range of academic opportunities. Teachers are likely to view these students as less receptive to help and less responsive to interaction, limiting teacher-student exchanges. Additionally, this self-presentation style could subtly bias teacher evaluation, thereby producing a self-fulfilling prophecy that contributes to lower grades. Future research should address the relationship between masculine posturing on evaluation, projections for future success, and actual achievement of college students.

Our second key prediction involving the higher sociability/social attractiveness of the academically disorganized student was also confirmed. This finding suggests that there may be a subtle stereotype in student sub-cultures involving students who are not as publicly concerned with academic tasks. These students are seen as more socially engaging than their conscientious peers.

The key question is causality. Are socially-oriented students less academic or more academic than their less socially-oriented peers, or is there no difference? Are there social rewards for showing disengagement from academic goal-setting behaviors, or is it defensive behavior. Students regard the cultivation of social relationships and recognition of the balance between work and play as significant parts of college social development. Consequently, the social rewards of positive social evaluation may adequately compensate for the academic underachievement that may result from disorganized academic behaviors. Moreover, as a part of school socialization, many students may come to believe that a salient self-presentation of an organized academic self may result in a number of social liabilities, such as "nerdism" and blocked social opportunities.

Research exploring the "anti-nerd identity" (Kinney, 1993) and "racelessness" (Fordham & Ogbu, 1986) for African-American students offers interesting perspectives on how public self-presentation of academic behaviors may undermine important social rewards in adolescent and African-American sub-cultures, respectively. The social desirability of an academically indifferent presentation style (sincere or disingenuous) may produce a cycle of increased academic indifference and diminished academic success. Further research should explore the relationship between gender-role percepts and social attractiveness with respect to academic tasks.

We also obtained an interesting result regarding the relationship between self-presentation portrayals and perceptions of a target's masculinity. The student described as academically organized was rated as more masculine than the disorganized target. At first glance, these results seem inconsistent with the perceived higher femininity of the conscientious target. However, because masculinity and femininity may be orthogonal dimensions (Spence, 1993) we interpret this finding as construct validity for our theoretical proposition that masculinity has both facilitative and inhibitory properties in academic environments.

The fact that the academically conscientious student is regarded as more masculine is probably best explained by viewing instrumentality as the core defining element of traditional masculinity in this society. Instrumentality, characterized by "getting the job done", is congruous with the target descriptions presented in this study. Moreover, achievement has historically been conceptualized within the male domain. As mentioned earlier, Doss and Hopkins (1998) reported that achievement represented one of two strong factors of masculine ideology across three different ethnic groups. Instrumental facets of masculinity, including competitiveness, assertiveness, and working well under pressure, are widely considered to facilitate eventual achievement.

Furthermore, the dominant power status held by many males in society contributes to equating achievement with masculinity.

Attribution research involving sex differences also offers further support for the strong link between masculinity and achievement. Past research has consistently found that female success is more often attributed to outside factors such as chance and luck, while participants attribute male achievement to more intrinsic qualities (Dweck & Bush, 1978). In rating an organized, conscientious target, students may have perceived the target to be highly masculine, due to the increased probability of success associated with these behaviors and the achievement relevance of several masculine traits. Future research should isolate those aspects of student academic self-presentation that are associated with specific gender-appropriate behaviors. The relationships between depicted academic self-presentation style and two independent facets of gender offer compelling support for the gender role-strain phenomenon that may shape and guide the behavior of individuals who seek to maintain gender-appropriate self-presentations.

Specifically, males and females seem to be placed in a "double-bind" by the conflicting demands of masculine posturing and achievement. The competing motivations of maintaining a masculine self-presentation, avoiding a feminine self-presentation, and achieving academic success may produce gender strain. This strain may be manifested in lower levels of academic goal-setting and higher levels of social activities that may undermine this goal-setting.

It is interesting to note that consumption of alcohol was one of the social activities on which the less organized individual was rated higher. While this alone may not be considered a socially attractive behavioral style, this item was highly correlated with a cluster of items that comprised a general social-attractiveness factor. In college settings, particularly those with hyper-masculine posturing norms, the consumption of alcohol and other academically disruptive behaviors may be considered a part of the "Cool Pose" cluster of behaviors that is insidiously reinforced in student norms and campus life. Also, the message transmitted by an emphasis on both achievement and masculine posturing is that achievement is only valued as a masculine behavior when it appears that the achievement is relatively effortless or appears without ostensible concern or programmatic goal-setting. This "I don't have to study" set of behaviors may also serve a self-protective function for those who are vulnerable to the underachievement that follows from poor time structure and self-handicapping. Self-handicapping is the process of producing impediments to successful outcomes to excuse failures (Berglass & Jones, 1978).

Academic self-handicapping may represent a strategy that young males utilize in a variety of ways to confront the competing pressures of masculine ideology. Self-handicapping could function within an academic context to protect academically underperforming males from private self-doubt and public disapproval. Poor performances may subsequently be attributed to a lack of effort, separating the outcome from the individual and lessening the negative appearance of failing to live up to the masculine goal of achievement. Conversely, academic self-handicapping could be utilized by an intelligent individual to win social approval among peer group members and avoid the stigma sometimes associated with academic success.

Future studies should explore the relationship between achievement and effort in the academic environment. Does achievement without effort lead a young male to experience the same amount of social ostracism? What age or sex differences exist in the relative importance attached to perceptions of success versus effort? The sincerity of an academically indifferent presentation style should also be investigated. Faced with societal expectations of achievement and the social penalties encountered upon adopting an academically organized, conscientious self-presentation, do young males internalize devaluation of academic goal-setting behaviors or reluctantly conform to peer expectations?

The results of this study have far-reaching implications that require further investigation. Limitations of the present study should therefore be noted. Although we sampled gender dimensions from widely used gender-role inventories, the traits we selected to operationalize masculinity or femininity may not have adequately captured these concepts as fully as the complete scales from which the sample items were drawn. Future studies should operationalize masculinity and femininity in ways that are broader and more representative of these constructs. The effect of additional aspects of gender on academic self-presentation strategies also warrants attention.

Additionally, research should explore the relationship between academic self-presentation strategies included in the present study and gender. While we made certain arguments regarding the duality of masculinity ideology on academic goal-setting, the potential impact of these gender percepts as they relate to sex differences was not addressed in the current research. Lasane et al. (1999) found that males and females did in fact differ in their academic-goal-setting behavior as a function of the gender of the target person. Do people make these social evaluations differently, for instance, when hypothetical target Person X is specified as a male or female? In the present study, the academically disorganized student was considered more likely a male than the academically conscientious student. Further research needs to identify the factors that equate disorganization with being a male in college settings. Research exploring these links in lower education levels is well established, but such conclusions are anecdotal at best in college samples.

Another salient research question concerns how femininity ideology, in contrast to masculinity ideology, affects the social psychological factors correlated to student goal-setting. While femininity is generally less valued in our society (Best & Williams, 1993), the cluster of behaviors associated with femininity have reinforcing properties in early educational years. Researchers should examine if these feminine gender-role behaviors retain their reinforcer potential into the college years: For instance, do females fear possible social evaluation bias that can e associated with failing to show gender- schematic behavior in academic contexts, or are they less vulnerable to such "gender role-strain" in a society where androgyny may be more highly valued than femininity?

Additionally, since "cool pose" and "racelessness" are constructs that have been advanced to describe African-American schooling experiences, do the gender and sociability constructs explored here impact other ethnic groups, particularly African-Americans? The series of ideas discussed in the present study are not restricted to male academic goal-setting and achievement. Instead, we are interested in exploring all aspects of gender role socialization that serve to undermine the ability of all students to reach optimal academic and social achievement.

REFERENCES

Adler, P. A., Kless, S. J., & Adler, P. (1992). Socialization to Gender Roles: Popularity among elementary school boys and girls. *Sociology of Education, 65,* 169-187.

American Psychological Association. (1992). Ethical principles of psychologists and code of conduct. *American Psychologist, 47,* 1597-1611.

Baumeister, R. F. (1982). A self-presentational view of social phenomenon. *Psychological Bulletin, 91,* 3-26.

Bem, S. L. (1981). Gender schema theory: A cognitive account of sex typing. *Psychological Review, 88,* 354-364.

Berglas, S. , & Jones, E.E. (1978). Drug choice as a self-handicapping strategy in response to non-contingent success. *Journal of Personality and Social Psychology, 36,* 405-417.

Bernard, M. E. (1979). Does sex role behavior influence the way teachers evaluate students? *Journal of Educational Psychology, 71,* 553-562.

Bernard, M. E., Elsworth, G., Keefauver, L. W., & Naylor, F. D. (1981). Sex-role behavior and gender in teacher-student evaluations. *Journal of Educational Psychology, 73,* 681-696.

Berndt, T. J., & Heller, K. A. (1986). Gender stereotypes and social inferences: A developmental study. *Journal of Personality and Social Psychology, 50,* 889-898.

Best, D.L., & Williams, J.E. (1993). A cross-cultural viewpoint. In A.E. Beall & R.J. Sternberg (Eds.), *The psychology of gender* (pp.215-248). New York: Guilford.

Costrich, N., Feinstein, J., Kidder, L., Marecek, J., & Pascale, L. (1975). When stereotypes hurt: Three studies of penalties for sex-role reversals. *Journal of Experimental Social Psychology, 11,* 520-530.

Czopp, A. M., Lasane, T. P., Sweigard, P. N., Bradshaw, S. D., & Hammer, E. D. (1998). Masculine styles of self-presentation in the classroom: Perceptions of Joe Cool. *Journal of Social Behavior and Personality, 13,* 1-14.

Doss, B. D., & Hopkins, J. R. (1998). The Multicultural Masculinity Ideology Scale: Validation from three cultural perspectives. *Sex Roles, 38,* 719-741.

Dweck, C. S., & Bush, E. S. (1978). Sex differences in learned helplessness: I. Differential debilitation with peer and adult evaluators. *Developmental Psychology, 12,* 147-156.Eccles (Parsons), J.S. (1990). Gender-role socialization. In R.M. Baron & W.G. Graziano (Eds.), *Social Psychology* (pp. 160-191). Fort Worth, TX: Holt, Rinehart and Winston.

Fagot, B. L., & Patterson, G. R. (1969). An in vivo analysis of reinforcing contingencies for sex-role behaviors in the preschool child. *Developmental Psychology, 1,* 563-568.

Feinman, S. (1981). Why is cross-sex-role behavior more approved for girls than for boys? A status characteristic approach. *Sex Roles, 7,* 289-300.

Fordham, S., & Ogbu, J.W. (1986). Black students' school success: Coping with the "burden of acting White."" *Urban Review, 18,* 176-206.

Gergen, K.J. (1985). The social constructionist movement in modern psychology. *American Psychologist, 40,* 266-275.

Kagan, J. (1964). Acquisition and significance of sex-typing an sex-role concepts and attitudes. In M.L. Hoffman & L.W. Hoffman (Eds.), *Review of child development research.* New York: Sage.

Kinney, D.A. (1993). From nerds to normals: The recovery of identity among adolescents from middle school to high school. *Sociology of Education, 66,* 21-40.

Lamb, M.E., & Roopnarine, J.L. (1979). Peer influences on sex-role development in preschoolers. *Child Development, 50,* 1219-1222.

Lasane, T.P. (1997). [Gender role distributions in a sample of college students]. Unpublished raw data.

Lasane, T.P., Czopp, A.M., Howard, W.L., & Sweigard, P.N. (1999). *Hypermasculinity and academic goal-setting: An exploratory study.* Manuscript submitted for publication.

Maccoby, E. E. (1987). The varied meanings of "masculine" and "feminine." In J.M. Reinisch, L.A. Rosenblum, & S.A. Sanders (Eds.), *Masculinity/Femininity: Basic Perspectives.* New York: Oxford Press.

Majors, R., & Billison, J. M. (1992). *Cool Pose: The dilemmas of black manhood in America.* New York: Lexington Books.

BEST COPY AVAILABLE

Pfeifer, C.M. & Sedlacek, W.E. (1974) Predicting Black student grades with nonintellectual measures. *Journal of Negro Education, 1*, 67-77.

Pleck, J.H. (1981). *The myth of masculinity*. Cambridge, MA: MIT Press.

Pleck, J.H. (1995). The gender role-strain paradigm: An update. In R.F. Levant & W.S. Pollack (Eds.) *A new psychology of men*. New York: Basic Books.

Richardson, L. R. (1981). *The dynamics of sex and gender: A sociological perspective*. (2nd ed.). Boston: Houghton-Mifflin.

Silverman, I.J., & Dinitz, S. (1974). Compulsive masculinity and delinquency: An empirical investigation. *Criminology, 11*, 498-515.

Silvern, L. E. (1978). Masculinity-Femininity in children's self-concepts: The relationship to teachers' judgements of social adjustment, and academic ability, classroom behaviors and popularity. *Sex Roles, 4*, 929-949.

Spence, J. T. (1993). Gender-related traits and gender ideology: Evidence of a multifactorial theory. *Journal of Personality and Social Psychology, 64*, 624-635.

Spence, J.T., Helmreich, R.L., & Stapp, J. (1974). The Personal Attributes Questionnaire: A measure of sex role stereotypes and masculinity-femininity. *JSAS Catalog of Selected Documents in Psychology, 4*, 43. (Ms. No. 617)

Stericker, A. B., & Kurdek, L. A. (1982). Dimensions and correlates of third through eighth graders' sex-role self-concepts. *Sex Roles, 8*, 915-929.

Tedeschi, J.T. (Ed.). (1981). *Impression management theory and social psychological research*. New York: Academic Press.

Author note: The funding for this research project was provided by the Office of the Provost, St.Mary's College of Maryland through a faculty development grant given to the first author. Portions of this research paper were presented at the annual meeting of the Eastern Psychological Association. The authors would like to thank colleagues Dr. J. Roy Hopkins, Dr. Geoffrey D. Munro, and Dr. Elizabeth Nutt Williams for reviewing earlier drafts of this manuscript.

BEST COPY AVAILABLE

Gender differences in psychological distress, coping, social support and related variables following the 1995 Dinar (Turkey) earthquake.

N. A. Karanci
N. Alkan
B. Aksit
H. Sucuoglu
E. Balta

Middle East Technical University
Ankara, Turkey

This study examined gender differences in psychological distress, coping strategies and social support subsequent to the 1995 Dinar (Turkey) earthquake. The study also examined variables related to distress levels for females and males. 315 adult survivors living in Dinar were administered a questionnaire focusing on socio-demographic variables, psychological distress, coping strategies, perceived social support and life events since the earthquake. The findings revealed that women reported greater distress as compared to men. Problem solving/optimistic approach was the most frequently used coping strategy for men, whereas for women fatalistic approach was the most frequently employed coping strategy. Both groups perceived highest support from family and spouse. Women reported experiencing more negative life-events since the earthquake. The results of the regression analyses showed that for women, perceived threat during the earthquake, the use of helplessness coping and lack of belief in control over the future were positively related to distress levels. For men the number of negative life-events experienced since the earthquake and helplessness coping were related positively, whereas the use of the problem solving/optimistic approach was negatively related to distress levels. Implications for disaster mental health programs are offered.

Natural disasters have extensive psychosocial impact on the affected populations (Durkin & Thiel,1993). Survivors of natural disasters have to adapt to drastically altered physical environments, economical losses, disruption of activities and homelessness. They also have to cope with the emotional trauma of witnessing loss of

---

Author info: Correspondence should be sent to: Dr. Nuray Karanci, Psych. Dept., Middle East Technical University, 06531, Ankara, Turkey
North American Journal of Psychology, 1999, Vol. 1, No. 2, 189-204.
©NAJP

lives, injury and property loss. Furthermore, in disasters like earthquakes the affected populations have to live with the threat of recurrence (Baum, Fleming, & Davidson,1983; Rubonis & Bickman, 1991; Zhang & Zhang, 1991). One of the most extensively investigated psychological consequences of disasters has been stress symptoms of the survivors. Some characteristics of the victims and the disaster event were found to be related to post traumatic stress responses. Greater stress was experienced by women and by those who had psychological problems prior to the disaster event (Nolen-Hoeksema & Morrow, 1991; Karanci & Rüstemli, 1995; Palinkas, Petterson, Russel, & Downs, 1993). The distress experienced by the victims is related to the unexpectedness, the scope, the intensity and the extent to which a disaster is general to a community (Baum et al., 1983). Although distress reactions are quite common among disaster victims, they tend to diminish over time (Rubonis & Bickman, 1991). The continuation of psychological distress was found to be related to the adversities following the disaster, such as lack of housing and break up or displacement of families (Goenjian, 1993).

The psychological distress experienced by the survivors can also be examined within the cognitive theory of stress and coping (Folkman, 1994; Folkman & Lazarus, 1985). According to this model, stress is a bi-directional process between the person and the environment. The degree of stress experienced by the person is mainly determined by the cognitive evaluation of the event and the coping resources available to the individual (Coyne, Aldwin, & Lazarus, 1981). According to Lazarus (1993), an event requiring an adaptation on the part of the person gives rise to two forms of appraisal. The primary appraisal involves the evaluation of the seriousness of the demand and the secondary appraisal involves the evaluation of one's resources in meeting the demand. Coping resources can take many forms, like coping skills, social support and sense of control (Matheny, Aycock, Pugh, Curlette, & Canela, 1986). Generalized belief about control is one of the personal resources affecting the type of coping that will be used in stressful encounters. Internal locus of control combined with social support may function as a buffer against stress (Sarason, Levine, Basham & Sarason, 1983). Similarly, the perceived existence of supportive social networks is often cited as a buffer against stress (Pittman & Lloyd, 1997; Sarason et al., 1983). Finally, coping, which can be defined as the cognitive and behavioral efforts to deal with demands seems to influence the stress experienced (Folkman & Lazarus, 1986). An important dimension of coping is the problem-oriented and emotion-focused coping. It has been reported that emotion-focused coping, which includes efforts to regulate emotional states, are related to poorer coping, whereas problem-focused coping , which involves efforts to recognize and directly deal with stressors, is related to better adjustment (Blake, Cook & Keane, 1992; Jenkins, 1997; Nezu & Carnevale, 1987).

The main aim of the present study was to examine gender differences in the distress experienced by the survivors of the Dinar earthquake and to explore the relationship of some socio-demographic and earthquake experience variables, negative life events since the earthquake, ways of coping and perceived social support with the distress experienced by the survivors.

METHOD

The Study Area and The Dinar Earthquake

Dinar is located at the juncture of the Aegean, Central Anatolian and Mediterranean regions in Turkey. An earthquake of magnitude M_L=5.9 struck Dinar on October 1 (Sunday), 1995 at 17.57 p.m. The main shock of the earthquake was preceded with foreshocks for four days, the largest one having a magnitude of 4.7. These foreshocks initiated structural damage in many buildings that were then severely aggravated by the main shock. Numerous aftershocks were recorded in the following days, which continued for more than three months. The Dinar earthquake caused 90 deaths and more than 200 injuries. The economic losses were estimated at 250 million US Dollars.

The total population affected by the earthquake in the region was 100,000 and the number of residential units was about 24,000. According to the damage survey conducted in the affected region after the earthquake, out of 24,000 residential units, 4340 (18%) were heavily damaged, 3712 (15%) were moderately damaged, 6104 (25%) were lightly damaged and the remaining 9844 (41%) were undamaged (Sucuoglu, Nurtug, Ergunay & Gencoglu, 1997). Since 4340 units were either collapsed or severely damaged in Dinar, a death toll of 90 might be less than expected (Alexander, 1996). The foreshocks in the days preceding the main shock considerably reduced the death toll because many fearful residents had already left their houses and/or the city before October 1.

According to Turkish disaster law, the government was responsible for the provision of disaster housing for the families who lost their homes during the earthquake. Families receiving aid from the government either as damage compensation or disaster housing were allowed to pay back these long term loans with very low interest rates. After the Dinar earthquake new disaster houses were constructed and distributed to their owners exactly one year after the earthquake. In the meantime they were given a monthly rental aid.

Participants

Participants were 315 adult residents (165: 52.4% females and 150: 47.6% males) of Dinar. The selection of the sample involved the application of certain criteria in order to sample from various sectors of the community. The criteria were applied for gender (nearly equal representation of males and females) , residence in particular types of houses (i.e.; "disaster houses" constructed after the earthquake, houses that had moderate, light and no damage from the 1995 earthquake) and work status (self employed, blue collar wage-workers, white-collar state employees, unpaid family workers and unemployed). Since the majority of women living in Dinar are housewives the great majority of the female sample (68%) was selected from the 26 residential neighborhoods in Dinar on the basis of the above-mentioned four types of housing. Since almost all men are out of their homes during the day it was not possible to reach them at home during the day. Therefore, the majority of the male sample was selected on the basis of status at work and interviewed either at their work sites or in various public places. It is important to note that at the time of the study, 16 months after the earthquake, it was reported by the local authorities that a sizable portion of the community was still out of Dinar. Thus, the sample is selected from those survivors who were then living in Dinar.

Of the sample, 32% were living in government built disaster houses, 22.5% in houses that had no damage from the 1995 earthquake, 27% in lightly damaged and 16% in moderately damaged and strengthened houses.

The mean age of the respondents was 34.3 years (SD = 11.5) and the mean number of years of education was 8.3 (SD = 3.7). The mean household size was 4 persons. Ninety per cent of the respondents stated that they were in Dinar during the earthquake. Seventy-one percent of the sample were born in Dinar and 72.4% were married. Sixty-eight percent of the female sample were housewives and other non-working women at home, and the rest were governmental employees (16%), wage workers (10%), self-employed (2.5 %) or unpaid family workers (2.5 %). Of the male sample, 31% were governmental employees, 33% were self-employed, 23% were wage workers, 5% were unpaid family workers and only 8% were unemployed.

Instruments

Data were collected by a questionnaire developed for the purposes of the present study. A pilot study using in-depth and focus-group interviews with key community members was undertaken in Dinar before the questionnaire was developed. The aim was to derive important dimensions and attitudes towards the earthquake event and its management. The questionnaire explored a large number of topics relating to the earthquake experience. Only data related to psychological distress, ways of coping , life events and social support will be presented in the present paper.

Psychological distress was measured by using a 40-item symptom check list (Symptom Check List- Revised; SCL; Derogatis & Cleary, 1977) which was previously translated and used with the survivors of the Erzincan, Turkey, earthquake (Karanci & Rustemli, 1995; Rüstemli & Karanci, 1996). This scale taps various distress reactions in the general population. The items tap somatic symptoms, fear and anxiety, depression and anger/irritability. Respondents were asked to rate each item for the degree of distress it caused within the past two weeks on a three point scale (1= not at all; 2= a little 3= a lot). Thus, the scale measures currently experienced distress symptoms (possible score range: 1-120).

Ways of coping was assessed by using the Turkish adaptation of the Ways of Coping Questionnaire (WCQ)(Folkman & Lazarus, 1985; Siva, cited in Ucman, 1990). In the adaptation of the questionnaire eight new items tapping fatalism and superstition, which were thought to be relevant to the Turkish culture were added to the original 66 items of the questionnaire. For the purposes of the present study the 74 items of the adopted scale were reduced to sixty-one items by two judges experienced in research in disaster stricken communities. In addition to item reduction, in order to increase the ease of responding the response format was changed from a four-point to a three-point scale (1 = never; 2 = sometimes; 3 = always). The scale was tested in a pilot study and one item was further excluded due to difficulties in comprehension. Details of the scale are given in the results section.

Negative life events experienced by the participants since the earthquake were measured by a nine-item scale (Karanci,1997). The participants were asked to report whether they experienced the listed events (death of spouse; divorce; death of a close relative; serious illness in themselves; serious illness in family members; serious problems with children and spouse; serious financial problems; loss of job in the family; serious psychological problems in themselves) (Yes = 1; No = 0). Total negative life events score was the sum of the individual items (Range: 0-9). The Cronbach alpha reliability coefficient for the scale was .61.

Perceived social support was measured by a 12-item scale, tapping the degree of perceived social support from the spouse/family, relatives, neighbors and friends (Karanci, 1997). Participants were asked to rate each item on a 4-point Likert scale (1 = never; 4 = always). Details of the scale are given in the Results Section.

Procedure

Data collection was conducted by 11 trained undergraduate and graduate students from the Departments of Psychology and Sociology of the Middle East Technical University, Ankara, Turkey in February, 1997. The interviewers went either to the houses or work places of the respondents and individually administered the questionnaires as structured interviews with a few open ended questions, and recorded the replies themselves. The 26 neighborhoods of Dinar and different work sites were assigned to different interviewers. They were instructed to interview only one adult from each household and to try to sample from different buildings and streets in the neighborhood. The administration of each questionnaire took about 45 minutes.

RESULTS AND DISCUSSION

The results on psychological distress, ways of coping , social support, and finally the predictors of distress will be presented in separate sections.

Psychological Distress

Total distress score was obtained by summing the responses to the 40 items of SCL-40 ($M = 64.77$, $SD = 14.1$). When general distress level is considered, women's mean ($M = 1.75$, $SD = .35$) distress scores were significantly higher than men's scores ($M = 1.46$, $SD = .28$, $t(310) = 8.09$, $p < .001$).

Responses to the SCL–40 were subjected to factor analysis employing principal components varimax rotation. The initial analysis, employing an eigenvalue of 1.00 as the criterion, resulted in 10 factors explaining 58% of the variance. Further analysis with restrictions on the number of factors extracted suggested that a 4-factor solution would serve the present purpose best. These factors accounted for 40% of the total variation. A factor loading of .35 was employed as the criterion for determining the item structures of these factors. Three items did not meet the criterion and were excluded from further analysis. The remaining 37 items were included under the factor on which they had the highest loading. Mean factor scores were simply the sum of the responses to the items of the factors divided by the number of items. Table 1 shows the item composition of the factors, the factor loadings of each item and the Cronbach alpha reliability coefficients. The Cronbach alpha reliability of the whole scale was .92.

To examine possible gender differences in the four factors, a 2 (gender) by 4 (somatization; depression; phobic anxiety; hostility/irritability) analysis of variance (ANOVA), with repeated measures on SCL-40 factors was conducted. The results revealed that

TABLE 1. Item Numbers of the Four SCL-40 Factors, Loadings, and Cronbach Alpha Values

Factor 1: Somatization
(variance explained 25%; Cronbach Alpha = .84)
5 (.66), 23 (.63), 29 (.63), 30 (.62), 3 (.58), 7 (.58), 22 (.56), 24 (.56), 1 (.53), 17 (.46), 35 (.36)

Factor 2: Depression
(variance explained 5.8%; Cronbach Alpha = .83)
8 (.67), 36 (.60), 16 (.59), 38 (.59), 31 (.56), 32 (.54), 40 (.50), 19 (.49), 20 (.47), 34 (.44), 18 (.44), 25 (.36)

Factor 3: Phobic Anxiety
(variance explained 5.3%; Cronbach Alpha = .77)
12 (.71), 15 (.65), 13 (.64), 6 (.63), 39 (.51), 28 (.50), 26 (.44), 9 (.37)

Factor 4: Hostility/Irritability
(variance explained 3.9%; Cronbach Alpha = .72)
4 (.76), 2 (.71), 37 (.61), 14 (.61), 11 (.35)

Note: Item numbers are followed by factor loadings in parentheses for the factor on which each item loaded highest.

the distress $F(3, 933) = 159.15$, $p < .001$, and gender $F(1, 311) = 55.52$, $p < .001$, main effects and the gender by SCL-40 factors interaction $F(3, 933) = 3.55$, $p<.05$ were significant. Table 2 presents the means for the SCL-40 scores for females and males.

Results of the Tukey HSD test for unequal N's showed that women's mean scores on all factors were significantly higher than the scores of men. As can be seen from Table 2, hostility/irritability is the most distressing symptom for both females and males. Although the hostility/irritability score of females is significantly higher than males, the difference is relatively small.

TABLE 2. Means and Standard Deviations of SCL-40 Factor Scores for Females and Males*

	Somatization	Depression	Phobic Anxiety	Hostility/ Irritability
	M	M	M	M
	SD	SD	SD	SD
Females	1.70_a	1.72_a	1.73_a	2.13_b
	.44	.46	.47	.52
Males	1.38_c	1.46_c	1.37_c	1.93_d
	.33	.36	.34	.52

*Means with different subscripts are significantly different at the .05 level.

Coping Strategies

The responses to the items of the WCQ were subjected to factor analysis using principal components with varimax rotation. Initially, 21 factors explaining 63 per cent of the variation were obtained. Further analysis with restrictions on the number of factors revealed that five factors explaining 29.1 per cent of the variance produced the clearest solution. Item loadings above .35 on each factor were chosen. Only one item with .34 loading under Social Support factor ("I talk to someone to find out more about the situation") was not excluded because of its theoretical fit into the factor. Eleven items did not meet the criterion and were excluded from further analysis. Remaining fifty items were included under the factor with the highest loading.

Table 3 presents the five factors, their items, factor loadings and the Cronbach alpha reliability coefficients. Cronbach alpha reliability of the whole scale was .76. The inter-correlations of the subscales varied between .51 and .78.

To examine possible gender differences in coping strategies, a 2 (gender) by 5 (coping: problem solving/optimistic; fatalistic approach; helplessness; social support; escape) ANOVA, with repeated measures on WCQ factors was conducted. Results of this analysis revealed a significant main effect for coping ($F(4, 1176) = 129.01$, $p < .001$) and gender by coping factors interaction was also significant ($F(4, 1176) = 14.73$, $p < .001$). Means and SDs of the WCQ factors for both genders are presented in Table 4.

Results of post-hoc comparisons by using Tukey-HSD indicated that men's mean score on helplessness approach was significantly lower than the mean scores of all coping types of men and women.

While women obtained highest score on fatalistic approach type of coping, men's highest score was on problem solving coping strategy. Men's problem solving/optimistic score was not significantly different from their score on the fatalistic approach. There are no significant difference between groups in the frequency of the use of seeking social support and escape type of coping strategies.

Social Support Scale

As a result of factor analysis employing principal components, varimax rotation employing the eigenvalue of 1.00 as the criterion in the initial analysis, four sub-scales explaining 74% of total variation was obtained. These factors were named as social support from neighbors, from relatives, from friends, from family members and spouse. Cronbach alpha reliability of the whole scale was .82. Composition of factors, factor loadings of each item and the results of post-hoc comparisons using Tukey-HSD indicated that there is no significant difference between males and females. Cronbach alpha reliability coefficients of the factors are presented in Table 5.

TABLE 3 Composition of Factors of WCQ with Factor Loadings, Percentage of Variance Explained, and Cronbach Alpha Values

Factor 1: Problem Solving/Optimistic
(variance explained 9.5%; Cronbach Alpha = .75)
57 (.53), 59 (.53), 60 (.51), 55 (.50), 28 (.50), 47 (.50), 48 (-.48), 18 (.48), 36 (.48), 38 (.47), 35 (.46), 3 (.46), 43 (.45), 42 (.43), 12 (.41), 9 (.40), 31 (.35)

Factor 2: Fatalistic Approach
(variance explained 8.5%; Cronbach Alpha = .78)
54 (.77), 37 (.67), 21 (.66), 50 (.64), 24 (.63), 30 (.61), 17 (.61), 25 (.46), 46 (.42)

Factor 3: Helplessness Approach
(variance explained 4.6%; Cronbach Alpha = .69)
40 (.63), 53 (.54), 58 (.52), 19 (.51), 51 (.49), 49 (.47), 2 (.46), 26 (.41), 45 (.40), 33 (.38), 44 (.35)

Factor 4: Social Support
(variance explained 3.5%; Cronbach Alpha = .59)
27 (.63), 34 (.58), 5 (.49), 20 (.45), 13 (.39), 10 (.34)

Factor 5: Escape
(variance explained 3%; Cronbach Alpha = .51)
6 (.58), 7 (.56), 15 (.49), 1 (.41), 11 (.39), 16 (.39)

Note: Item numbers are followed by factor loadings in parentheses for the factor on which each item loaded highest.

TABLE 4 Means and Standard Deviations of WCQ Factor Scores for Females and Males*

	Problem/ Solving	Fatalistic	Helpless	Social Support	Escape
	M SD	M SD	M SD	M SD	M SD
Females	2.40_a	2.56_b	2.10_c	2.23_d	2.16_{cd}
	.27	.34	.35	.43	.38
Males	2.59_b	2.50_{ba}	1.89_e	2.25_d	2.24_d
	.39	.23	.42	.34	.44

*Means with different subscripts are significantly different from each other at the .05 significance level.

TABLE 5 Item Numbers of the Four Social Support Scale Factors, Their Factor Loadings and Cronbach Alpha Values

---

Factor 1: Social Support From Neighbors
(variance explained 33.8%; Cronbach Alpha = .89)
11 (.89), 12 (.84), 10 (.83)

Factor 2: Social Support From Relatives
(variance explained 17.6%; Cronbach Alpha = .83)
9 (.87), 8 (.86), 7 (.79)

Factor 3: Social Support From Friends
(variance explained 12.1%; Cronbach Alpha = .82)
6 (.84), 4 (.82), 5 (.82)

Factor 4: Social Support From Family And Spouse
(variance explained 11.2%; Cronbach Alpha= .72)
2 (.89), 1 (.86), 3 (.55)

Note: Item numbers are followed by factor loadings in parentheses for the factor on which each item loaded highest.

In order to examine possible gender difference in social support factors, a 2 (gender) by 4 (social support from: neighbors; relatives; friends; family/spouse) ANOVA with repeated measures on Social Support Scale factors was conducted. The results revealed that social support main effect (F (3,834) = 123.58, $p < .001$) and gender by social support interaction was significant (F (3,834) = 2.92, $p < .05$). Table 6 presents the means of social support factors.

TABLE 6. Means and Standard Deviations of Social Support Scale Factor Scores for Females and Males*

	Soc. Sup. Neighbors	Soc. Sup. Relatives	Soc. Sup. Friends	Soc. Sup. Family
	M	M	M	M
	SD	SD	SD	SD
Females	2.34_b	2.82_{cd}	3.07_{ce}	3.41_a
	.98	.93	.76	.76
Males	2.10_b	2.69_d	3.21_{ae}	3.33_{ae}
	.99	.98	.81	.75

*Means with different subscripts are significantly different from each other at the .05 significance level.

Results of post-hoc comparisons using Tukey-HSD indicated that there was no significant gender difference in the level of perceived social support from neighbors, relatives, friends and family members/spouse. Both women and men obtained their highest scores on the social support from family/spouse factor. The mean scores of social support from neighbors were significantly lower than all other social support resources for both females and males.

Predictors of Distress

Initially a correlational analysis was conducted for determining the potential variables that could be used as predictor variables for distress levels. The scores on the five factors of the WCQ, four factors of the social support scale, belief in control of one's future life (measured by a single question: " Do you believe that you can exert control over your life in the future?"; 1 = not at all; 4 = very much so), total negative life events since the earthquake and main socio-demographic variables such as age, gender (1 = women, 2 = men), years of education, current employment status (1 = currently employed, 2 = unemployed) were used. In addition to these variables, two variables reflecting earthquake exposure were created; degree of threat perception during the earthquake and loss of property. In degree of threat perception, responses to three questions were summed. These were "At the time of the earthquake, did you think that you may die due to the earthquake?" (1 = no, 2 = yes), "At the time of the earthquake, did you think that someone in your family may die due to earthquake?" (1 = no, 2 = yes) and "Did you see any dead bodies or a heavily injured person right after the earthquake?" (1 = no, 2 = yes). For loss of property, two questions that aimed to assess the degree of damage to the house where the respondent was living at the time of the earthquake (1 = not damaged, 4 = heavily damaged /destroyed) and amount of loss of property (1 = no loss, 4 = great amount) of the person, were summed.

The correlational analysis showed that total distress was positively correlated with helplessness coping style and negatively related to problem solving and escape styles of coping. Belief in future control was negatively related to the total distress level. Distress level was positively correlated with number of negative life events experienced since the earthquake and employment status. Among the social support scale factors, only social support received from relatives was negatively correlated with the level of the distress. While the degree of threat perception was positively related to the distress, amount of loss did not correlate with the distress level.

In order to examine the variables that are related to the distress levels separate multiple regression analyses were conducted for females and males. In the light of Pearson correlation results, only variables which had a significant correlation with distress were used as predictor variables. Total distress level, which was the sum of responses to the SCL-40, was the dependent variable. Independent variables were entered in five steps. In the first step the current employment status was included (1 = currently employed, 2 = unemployed). In the second step among the variables reflecting earthquake exposure, perception of threat was entered. In step three, the social support from relatives factor from the social support scale was entered. Scores on helplessness coping, escape, and problem solving/optimistic types of coping strategies were included in step four. Finally, in step five, total score that the person received from the negative life events scale and one's belief in future control of his/her own life were entered. An analysis of gender differences in the predictor variables not presented previously showed that men had a higher belief in control (M = 2.96) as compared to women (M = 2.38). Women reported more negative life events (M = 2.01) than men (M = 1.60) . Men and women did not differ in their threat perceptions.

According to the results of multiple regression analysis, for women, eight variables explained 24% of the variance in general distress level. Perception of threat and helplessness coping style were the best positive predictors of stress level, whereas belief in future control was the best negative predictor. For men, 43% of the variance was explained by eight variables. In males, the number of negative life events and helplessness type of coping were the best positive predictors of higher levels of distress. More frequent use of problem solving/optimistic type of coping was the best negative predictor of distress level.

GENERAL DISCUSSION

The present study focused on gender differences in long term distress experienced by the survivors of the Dinar earthquake and explored the relationship between the distress experienced by the survivors and some socio-demographic and earthquake experience-related variables, negative life events since the earthquake, ways of coping, and perceived social support.

The results revealed a number of gender differences in distress, coping strategies, and variables that relate to distress levels. Women experienced more distress as compared to men on all factors of the SCL-40, and on total distress. This finding is in line with the literature pointing to greater degree of distress among women (Karanci & Rüstemli, 1995; Rubonis & Bickman, 1991; Uçman, 1990). However, since the study was undertaken 16 months after the earthquake, and since a non-disaster exposed control group was not used, it is not clear that the gender differences were caused by the earthquake.

The gender differences in coping showed that males and females both used the problem solving/optimistic and fatalistic approaches the most. However, men used the problem solving/optimistic strategies more frequently than women, whereas women used the helplessness approach more frequently than men. They did not differ in the use of the fatalistic approach. In line with the literature, men's most frequently used coping style was the problem solving/optimist approach (Ptacek, Smith, & Zanas,1992). On this style men's scores were significantly higher than their scores on helplessness, social support and escape styles.

For both men and women the most frequently used coping styles were problem solving/optimistic and fatalistic styles. Although this result supports the use of emotion and problem-focused strategies together (Folkman & Lazarus, 1986; Sahin & Durak, 1995; Uçman, 1990), it may also point to cultural influences. The use of a fatalistic style can be related to cultural factors. At least for this specific sample the frequent use of fatalistic style of coping might be related to Islamic religious beliefs. Some items of the fatalistic approach of coping such as, "I believe that god knows the best", "I try to be happy with what I have", "I go along with fate, sometimes I just have bad luck" have similarities with Islam, the religion of the participants. People might be using these coping strategies due to their religious beliefs. Since the faith of Islam is not submissive, a fatalistic coping approach does not necessarily imply being submissive or helpless. A fatalistic approach may also function for the regulation of emotions and enable emotional relief (Silver & Wortman, 1980; cited in Folkman, 1984, p. 844). Thus, a fatalistic approach may facilitate the use of problem-solving strategies. Theoretically, the effectiveness of problem-focused coping depends on the success of emotion-focused coping. "Otherwise, heightened emotions may interfere with the cognitive activity necessary for problem focused coping" (Folkman 1984, p. 845). The more frequent use of problem-solving strategies by men may also be related to the types of events to which they are exposed and their appraisal by men and women. It is known that the use of problem-focused coping increases when the situation is appraised as changeable and when direct action is required. Emotion-focused coping is used when the situation is appraised as stable or resistant to change (Folkman, Lazarus, Gruen, & DeLongis, 1986). Women may have to cope with events that require regulation of emotions, while men might have such appraisals that require direct action and active problem solving.

When the negative life events reported by males and females were compared, the total score of women was significantly higher than the total score of men. With respect to the items of the negative life events scale, there were gender differences only in experiencing "severe psychological or emotional problems," a greater percentage of women endorsing this event (35.8% women ; 20 % men; Chi Square = 9.62; *p* <.05). The higher frequency of the use of the helplessness approach by women may be related to their appraisal of this event as resistant to change. Such an appraisal might have led them to cope not instrumentally but emotionally. Therefore, without knowing the appraisals for the specific events, we can not draw a clear conclusion about why men and women differed in their coping approaches. In future research, more fine-grained analyses focusing on negative events, their appraisals, and specific coping approaches, may provide a better understanding of gender differences.

There were no gender differences for perceived social support. However, for both men and women support from the spouse/family was the highest, and from the neighbors was the lowest.

The examination of the predictors of distress levels revealed a number of gender differences. For females, helplessness coping approach, degree of earthquake threat perception, and lack of belief in future control appeared as significant variables. For men, helplessness approach, problem solving/optimistic styles of coping, and number of negative life events experienced after the earthquake were significant predictors of distress level. Thus, apart from helplessness coping, which was common for males and females, there appeared to be different variables related to current distress.

In future research it might be fruitful to explore whether men and women differ in their frequency of recall of the earthquake event and how they process their earthquake memories over time. The differences may be related to a more ruminative style of responding in women (Nolen-Hoeksema & Morrow, 1991). Since perception of threat can be evaluated as a primary appraisal process, threat perception may lead to negative emotions, especially if the person lacks necessary personal resources and coping options.

For men, if we consider the negative life events experienced as threat or loss perception in the primary appraisal process, helplessness coping style may lead to increases in distress level. Problem-focused coping strategies may reduce distress.

Helplessness coping style was the only significant predictor of distress for both genders. Helplessness type of coping as an emotional-focused coping strategy is difficult to distinguish from the process of secondary appraisal. This type of coping may not only include the behavioral and cognitive efforts but also emotional state resulting from the appraisals. In future research it might be fruitful to focus on procedures that could decrease the helplessness approach and to explore intervention methods that could increase beliefs in control and the use of problem oriented coping. It may be valuable to assess the impact of disaster-preparedness training on coping strategies with specific disaster related events. For future studies in the area of post-disaster psychology, it may prove valuable to examine negative events that participants face, their appraisals of such events, and their coping strategies using longitudinal designs.

Limitations of the study include the impossibility of drawing conclusions about causality. Furthermore, the coping approaches may have reflected habitual styles of coping rather than coping with specific post-disaster difficulties. Finally, the time lapse after the earthquake was quite long.

Our results may have some implications for disaster psychological services. One suggestion is to give women coping strategies and preparedness skills in order to increase their beliefs in control. Also, it seems important to let women process memories of the earthquake event and to let them have outlets for this processing such as post-disaster critical stress debriefing groups. In planning for the future, attempts should be made to create pre-disaster preparedness programs and post-disaster mental outreach programs.

REFERENCES

Alexander, D. (1996). The health effects of earthquakes in the mid-1990's. *Disasters, 20(3)*, 231-247.

Baum, A., Fleming, R , & Davidson, L.M. (1983). Natural disaster and technological catastrophe. *Environment and Behavior, 15*, 333-354.

Blake, D. D., Cook, J. D., & Keane, T. M. (1992). Post-traumatic stress disorder and coping in veterans who are seeking medical treatment. *Journal of Clinical Psychology, 48*, 695-704.

Coyne, J. C., Aldwin, C., & Lazarus, R. S. (1981). Depression and coping in stressful episodes. *Journal of Abnormal Psychology, 90*, 439-447.

Derogatis, L.R., & Cleary, P.A. (1977). Confirmation of the dimensional structure of the SCL-90: A study in construct validation. *Journal of Clinical Psychology, 33*, 981-989.

Durkin, M.E., & Thiel, C.C. (1993). Earthquakes: A primer for the mental health professions. In R.D.Allen (Ed.), Handbook of post-disaster interventions (Special Issue). *Journal of Social Behavior and Personality, 8(5)*, 379-404.

Folkman, S. (1984). Personal control, stress and coping processes: theoretical analysis. *Journal of Personality and Social Psychology, 46*, 839-852.

Folkman, S., & Lazarus, R. S. (1985). If it changes it must be a process: Study of emotion and coping during three stages of college examination. *Journal of Personality and Social Psychology, 48*, 150-170.

Folkman, S., & Lazarus, R. S. (1986). Stress process and depressive symptomatology. *Journal of Abnormal Psychology, 95*, 107-113.

Folkman, S., Lazarus, R. S., Gruen, R. J., & DeLongis, A. (1986). Appraisal, coping, health status, and psychological symptoms. *Journal of Personality and Social Psychology, 50*, 371-579.

Goenjian, A. (1993). A mental health relief program in Armenia after the 1988 earthquake. *British Journal of Psychiatry*, 163, 230-239.

Jenkins, S. R. (1997). Coping and social support among emergency dispatchers: Hurricane Andrew. *Journal of Social Behavior and Personality, 12*, 201-216.

Karanci, N. A. (1997). Erzincanlilarin afet yönetimi ile ilgili degerlendirmeleri ve beklentileri. (Evaluations and reactions of the survivors of the Erzincan earthquake). *Fourth National Earthquake Engineering Conference Book*, 691-698, Earthquake Engineering, Turkish National Committee, Ankara.

Karanci, N. A., & Rustemli, A. (1995). Psychological consequences of the 1992 Erzincan (Turkey) earthquake. *Disasters, 19(1)*, 8-18.

Lazarus, R. S. (1993). From psychological stress to the emotions: A history of changing outlooks. *Annual Review of Psychology, 44*, 1-21.

Matheny, K. B., Aycock, D.W., Pugh, J. L., Curlette, W. L., & Canela, K. A. S. (1986). Stress coping: A qualitative and quantitative synthesis with implications for treatment. *The Counseling Psychologist, 14*, 499-549.

Nezu, A. M., & Carnevale, G. J. (1987). Interpersonal problem solving and coping reactions of Vietnam veterans with postraumatic stress disorder. *Journal of Abnormal Psychology, 96*, 155-157.

Nolen-Hoeksema, S., & Morrow, J. (1991). A prospective study of depression and post-traumatic stress symptoms after a natural disaster: The 1989 Loma Prieta earthquake. *Journal of Personality and Social Psychology, 61*, 115-121.

Palinkas, L. A., Petterson, J. S., Russell, J., & Downs, M. A. (1993). Community patterns of psychiatric disorders after the Exxon Valdez oil spill. *American Journal of Psychiatry, 150*, 1517-1523.

Pittman, J. F., & Lloyd, S. A. (1997). Quality of life, social support, and stress. *Journal of Marriage and the Family*, 53-67.

Ptacek, J. T., Smith, R.E., & Zaras, J. (1992). Gender, appraisal and coping: A longitudinal analysis. *Journal of Personality, 60*, 747-770.

Rubonis, A.V., & Bickman, L. (1991). Psychological impairment in the wake of disaster: the disaster psychopathology relationship. *Psychological Bulletin, 109*, 384-399.

Rüstemli, A., & Karanci, N. A. (1996). Distress reactions and earthquake - related cognitions of parents and their adolescent children in a victimized population. *Journal of Social Behavior and Personality, 11(4)*, 767-780.

Sahin, N. H., & Durak, A. (1995). Stresle basa-çikma tarzlarý ðlçegi: Üniversite öðrencileri için uyarlanmasý. (Ways of coping with stress: Adaptation for university students). *Türk Psikoloji Dergisi, 10*, 56-73.

Sarason, I. G., Levine, H. M., Basham, R. B., & Sarason, B. R. (1983). Assessing social support: Social support questionnaire. *Journal of Personality and Social Psychology, 44*, 127-139.

Sucuoðlu, H., Nurtug, A., Ergünay, O., & Gençoðlu, S. (1997). Engineering evaluation of the 1 October 1995 Dinar Earthquake (M_L = 5.9). *Journal of Earthquake Engineering, 1(3)*, 581-602.

Uçman, P. (1990). Ülkemizde çalýþan kadýnlarda stressle basa çikma ve psikolojik rahatsizliklar.(Coping with stress and psychological distress in women). *Türk Psikoloji Dergisi, 7*, 58-75.

Zhang, H. C., & Zhang, Y. Z. (1991). Psychological consequences of earthquake disaster survivors. *International Journal of Psychology, 26(5)*, 613-621.

End Notes: This research was supported by a grant from the Middle East Technical University Applied Research Fund. We are also grateful for the assistance of the Turkish General Directorate of Disaster Affairs. Details on the regression analyses and scale items are available from Dr. Karanci.

Self-Esteem and Sex Attitudes as Predictors of Sexual Abstinence by Inner-City Early Adolescents

Joseph Donnelly
Eva Goldfarb
Montclair State University
David F. Duncan
Brown University
Michael Young
University of Arkansas
Carolyn Eadie
Danielle Castiglia
Montclair State University

The following study examined attitudes as a predictor for sexual abstinence among a group of inner-city adolescents in northern New Jersey. Students received an abstinence education curriculum and completed pre- and posttest surveys. Results indicated that there are a number of significant attitudinal predictors for adolescent sexual abstinence, including the belief that sex before marriage was not "alright," the belief that few peers were engaging in sexual intercourse, and disagreement with the belief that sexual intercourse is just a normal part of teenage dating. Results from this study are encouraging because they suggest that changing attitudes can have a positive effect on behaviors.

More than one million girls become pregnant every year in the U.S., a rate of teen pregnancy greater than those of other industrialized nations. Evidence suggests that these teenage mothers are likely to experience poorer health outcomes, lower levels of school completion, more frequent pregnancies, more risk of being a single parent, and more risk of welfare dependency than are females who wait until age 20 to give birth, (Brown & Eisenberg, 1995; Morris, Warren, & Aral, 1993).

During recent decades approaches to prevention of adolescent pregnancy have ranged from education in sexual biology to affective education and sexual values clarification, along with such innovations as special schools for pregnant girls, school-based clinics, and programs that link sexuality education with job training. Unfortunately, comprehensive reviews of these programs continue to find few programs that have been

---

Author info: Correspondence should be sent to: Dr. Joseph Donnelly, Psychology Dept., Montclair State University, Montclair, NJ 07043

North American Journal of Psychology, 1999, Vol. 1, No. 2, 205-212.
©NAJP

well evaluated and fewer that appear to be successful in reducing teen pregnancy (Kirby, 1997; Moore, Brent, Miller, & Morrison, 1995).

While health educators have found most existing curricula to be too narrow and of dubious effectiveness, critics outside the profession have increasingly charged that the curricula were fundamentally misdirected. These critics saw too much emphasis on decision making and too little on teaching that the "right choice" was abstinence until marriage. They charged that too much attention was given to birth control and "safe sex" when the real goal should be no sex. Such criticisms led to adoption of federal legislation under Titles V and XX of the U.S. Code, mandating, and providing funding for, abstinence-oriented sex education programs in the public schools. Since 1997, all new sex education programs funded by the Office of Adolescent Pregnancy Prevention (OAPP) have been required to be abstinence education programs.

The federal government has pledged an investment of more than five-hundred-million dollars over a five-year period in support of such abstinence education programs. Such a large public expenditure brings with it a responsibility to plan and implement programs which are based on an accurate understanding of the factors which promote sexual abstinence. Unfortunately, this is an area in which opinions and theories are far more plentiful than are empirically established relationships.

At the level of national statistics it is clear that age is the single most important predictor of early intercourse (Newcomer & Baldwin, 1992). Beyond this, and to a much lesser extent, males are more likely to be non-virgins than females and inner city youth more so than suburban or rural youth.

One of the most thorough reviews of the literature on teen pregnancy identified four broad factors that consistently predicted early parenthood: poverty, early school failure, early behavioral problems, and family dysfunction (Moore, et al., 1995). That review also noted that only a small number of intervention projects had addressed these four factors. Another review, performed by Kirby (1997) for the National Campaign to Prevent Teen Pregnancy, concluded that teen pregnancy prevention initiatives should address such factors as "poverty, lack of opportunity, family dysfunction, and social disorganization more generally" (p. 13).

In a review of the relationship between socioeconomic characteristics of neighborhoods and children's well-being Coultron (1995) found that the presence of affluent and middle-class families promotes school achievement, cognitive development, and avoidance of teen pregnancy among all the children in the neighborhood. Coultron also reported that neighborhood social organization was related to teen pregnancy. As neighborhoods experienced increases in turnover and female head of households, a community's internal control was diminished, resulting in decreases in friendship networks, participation in institutions, normative consensus and monitoring of the environment. This, in turn, led to increases in teen sexual activity and resultant pregnancies.

Based on information collected from students and staff at a large inner-city vocational high school, Gordon (1996) concluded that, contrary to popular belief, risk-taking was not an element in adolescent pregnancy in this population. Instead, most teens who had been pregnant said the pregnancy was intended. Engaging in unprotected sex was purposeful rather than risk-taking behavior in their eyes. Gordon urged that awareness of the values and beliefs about sexual norms among inner-city adolescents was crucial in preventing pregnancy in this high risk population.

While we know that inner city students are at particular risk of teenage pregnancy and may be most vulnerable to the consequences of pregnancy, we know very little about what influences some inner city teens to engage in early intercourse and others to remain abstinent. A number of researchers have explored the factors related to sexual activity in inner city youth through the use of focus groups Gilmore, DeLamater, & Wagstaff, 1996; Rosenthal, Lewis, & Cohen, 1996; Stanton, Black, Kalijee, & Ricardo, 1993). Most studies which have collected data from representative samples of inner city-students have focused primarily on numbers engaged in sexual activity and not on possible causal influences which might be modifiable through education.

Barone, et al. (1996) surveyed 2,248 students in grades 6, 8, and 10 of a southern New England public school district in a low socioeconomic status area. They found, "a complicated web of influences among age, gender, race, SES, and high-risk sexual behavior" (p. 72). As expected, they found that older students were more likely than younger students to have had sexual intercourse.

Black adolescents were significantly more likely than Whites or Hispanics to be sexually experienced. Males were more likely to be sexually experienced than were females. The effects were found to be additive, such that older Black adolescents had the most sexual partners. Modifiable characteristics such as attitudes or self esteem were not examined.

Thornberry, et al. (1997), surveyed a sample of 615 urban 7th- and 8th-grade males from Rochester, New York. Factors consistently found to be correlated with teenage fatherhood were: 1)minority status; 2) teens whose parents had become parents at an early age and whose parents had relatively little formal education; and 3) teens who were involved in deviant behavior such as membership in gangs, drug use, violent behavior, and early sexual activity. Again, the risk factors were additive; the more of the above risk factors that could be applied to an individual, the more likely he was to become a teen father. Again also, factors readily influenced by educational efforts were not identified.

Any systematic effort to combat teenage pregnancy and promote sexual abstinence among teens must be based on knowledge of the factors which influence teens to remain abstinent. If the schools are going to play a meaningful role in such an effort, then we need to know more about relevant factors that the schools can address. Two areas that are addressed by many sex education programs are self esteem and sexuality related attitudes but empirical evidence of their relevance is weak. This analysis will examine their relevance as predictive factors for sexual abstinence in early adolescents.

METHOD

The data for this study were collected in the posttest phase of a community trial of the *Sex Can Wait* curriculum (Core-Gebhart, Hart, & Young, 1997). Data from 426 students (227 females and 199 males) at three schools where the curriculum was implemented and from 413 students (211 females and 202 males) at three comparison schools are combined (n = 839) for these analyses.

The evaluation instrument was a 47-item questionnaire composed of questions adapted from other studies in the field. Five questions assessed demographic information, nine related to self-esteem, fifteen to attitudes regarding sexuality, four to sexuality knowledge, nine to behaviors, and five to behavioral intentions. Self-Esteem and some attitude questions were assessed via a four-point Likert-type scale. Other attitude questions were true false. Behaviors and behavioral intentions were assessed using likert-type scales or yes-no responses.

Logistic regressions were conducted to examine the influence of several demographic factors and self-esteem and sexuality related attitudes on whether a student reported having ever had intercourse or not. These analyses were structured to identify predictors of sexual abstinence. Variables were entered in a forward stepwise fashion until the criterion of a 1% increase in likelihood ratio was no longer met. Given a number of studies demonstrating significant differences between female and male adolescents in attitudes and decisions relating to sexual behaviors (De Gaston, Weed, & Jensen, 1996; Murphy, Rotheram-Borus, & Reid, 1998), regression analyses were performed separately for females and for males.

It must be acknowledged that these analyses clearly fail to meet the requirements of the specificity assumption for the use of logistic regression (Aldrich & Nelson, 1984). This is a failing common to most studies using logistic regression and cannot be regarded as critical (Wright, 1994). However it is important to note that it means that the estimates of percent of variance explained found in these analyses will be a function of the variables selected for study and are not correct estimates of population coefficients given all possible predictors.

RESULTS

Females

Having had sexual intercourse was reported by 10.3% of the adolescent girls in this sample. For adolescent girls, nine significant predictors were found. As expected, the most powerful predictor was age, with the youngest girls most likely to be sexually abstinent. The second variable was race, with latina and asian-pacific girls more likely to be abstinent. Girls who reported, "my family supports and helps me" were more likely to be abstinent. Girls who reported that they felt they "have good personal qualities," however, were less likely to be abstinent. Disagreement with the view that, "it is alright for two people to have sex before marriage if they are in love," was predictive of abstinence. Girls who believed that "sexual abstinence is the best choice" were likely to have behaved accordingly. Sexual abstinence was also predicted by disagreement with the statements that, "my friends think that it is okay for people my age to have sexual intercourse," "it's okay for people my age to have children," and "having sexual intercourse is just a normal part of teenage dating."

Taken together, these nine variables resulted in correct prediction of abstinence status in 90.1% of the cases. The model correctly identified 97.99% of the abstinent girls but only 27.1% of those who were sexually active.

Males

Sexual intercourse was reported by 30.1% of the male subjects. Six variables proved to be significant predictors of sexual abstinence in the adolescent boys. For the boys, as for the girls, age was the best predictor, with younger subjects being more likely to be abstinent. The second strongest predictor was expecting to graduate from high school -- "I can see myself graduating from high school." Next was disagreement with the view that, "it is alright for two people to have sex before marriage if they are in love," followed by disagreement with the belief that, "most of my friends have had intercourse." Belief that, "sexual abstinence is the best choice for people my age when it comes to decisions about sex," predicted abstinence, as did disagreement with the view that, "having sexual intercourse is just a normal part of teenage dating."

Taken together, these six variables resulted in correct prediction of abstinence status in 79.3% of the cases. The model correctly identified 89.8% of the abstinent boys and 55.9% of those who reported being sexually active.

DISCUSSION

The results of this analysis do not suggest that self-esteem is an important factor in differentiating between virgin and non-virgin early adolescents. A number of sexuality-related attitudes did prove to be predictors of sexual abstinence and three of these predictors were common to both males and females.

Given the emphasis on improving self-esteem in many sex education curricula, including those which are abstinence-oriented, it is somewhat surprising that the only self-esteem question which proved to be a significant predictor of abstinence status for females, "I think that I have good personal qualities," was inversely related to abstinence. For boys the only significant self-esteem item was the expectation of graduating high school and it did predict abstinence as expected. This lack of support for a strong role of self-esteem in sexual decision making is consistent with previous findings by Robbins, Kaplan, and Martin (1985), Sonnenstein (1986), and Thornberry, Smith and Howard (1997). It is also consistent with Gordon's (1996) finding that sexual activity was unrelated to locus of control and was usually a result of choice rather than risk taking in an inner-city population of adolescents.

It should be noted that two questions related to religion were included in the survey. They were: "How often do you attend religious services?" and "How religious do you feel you are?" Both these questions have been found to be useful variables in studies of other health and social behaviors. Neither proved to be a significant predictor of sexual behavior in this study. This is consistent with the previous finding by Thornberry, Smith and Howard (1997) that religiosity was not related to teenage fatherhood.

Attitude is one of the most important factors of behavioral intent, which is considered to be the immediate antecedent of overt behavior (Gilbert & Sawyer, 1995). Behavioral intent is the function of two main factors: personal factors and those reflective of social factors. Personal factors are influenced largely by attitude. Social factors are influenced by an individual's perception of the social pressures to perform or not perform a specific behavior. Through administering a curriculum that seeks to increase positive attitudes towards abstinence, as well as influence the social environment that adolescents experience, programs such as *Sex Can Wait* have demonstrated the potential to create important and real behavioral change.

REFERENCES

Aldrich, J. H., & Nelson, F. D. (1984). *Linear probability, logit, and probit models*. Beverly Hills, CA: Sage.

Barone, C., Ickovics, J. R., Ayers, T. S., Katz, S. M., Voyce, C. K., & Weissberg, R. P. (1996). High-risk sexual behavior among young urban students. *Family Planning Perspectives, 28*(2), 69-74.

Brown S & Eisenberg L. (Eds.) (1995). *The Best Intentions: Unintended Pregnancy and the Well-Being of Children and Families.* Institute of Medicine Report. Washington D.C.: National Academy Press.

Core-Gebhart, P., Hart, S. and Young, M. (1997). *Sex Can Wait - a curriculum for middle school classrooms - OAPP Approved Edition.* Santa Cruz, CA: ETR Associates.

Coultron C. (1995). Using community-level indicators of children's well-being in comprehensive community initiatives. In: J. Connell, A. Kubisch, L. Schorr, C. Weiss (Eds.). *New Approaches to Evaluating Community Initiatives.* Washington, DC: Aspen Institute, 1995.

De Gaston, J. F., Weed, S., & Jensen, L. (1996). Understanding gender differences in adolescent sexuality. *Adolescence, 31*(121), 215-231.

Denny, G., Young, M. , & Spear, C.. (1999). An Evaluation on the Sex Can Wait Abstinence Education Curriculum Series. *American Journal of Health Behavior, 23*, (2), 134-143.

Gilbert, G., & Sawyer, R. (1995) *Health Education: Creating Strategies for School and Community Health*, College Park, MD: Jones & Bartlett, 1995.

Gilmore, S., DeLamater, J., & Wagstaff, D. (1996). Sexual decision making by inner city Black adolescent males: A focus group study. *Journal of Sex Research, 33*(4), 363-371.

Gordon, C. P. (1996). Adolescent decision making: A broadly based theory and its application to the prevention of early pregnancy. *Adolescence, 31*(123), 562-584.

Kirby D. (1997). *No easy answers: Research findings on programs to reduce teen pregnancy.* Washington, DC: National Campaign to Prevent Teen Pregnancy.

Moore, K. A., Brent, C. Miller, D. G., & Morrison, D. R. (1995). *Adolescent sex, contraception, and childbearing: A review of recent research.* Washington, DC: Child Trends, Inc.

Morris L, Warren C., & Aral, S. (1993). Measuring adolescent sexual behaviors and related health outcomes. *Public Health Reports, 108* (supplement 1), 31-36.

Murphy, D. A., Rotheram-Borus, M. J., & Reid, H. M. (1998). Adolescent gender differences in HIV-related sexual risk acts, social-cognitive factors and behavioral skills. *Journal of Adolescence, 21*, 197-208.

Newcomer, S., & Baldwin, W. (1992). Demographics of adolescent sexual behavior, contraception, pregnancy, and STDs. *Journal of School Health, 62*(7), 5-70.

Robbins, C., Kaplan, H. B., & Martin, S. S. (1985). Antecedents of pregnancy among unmarried adolescents. *Journal of Marriage and the Family, 47*, 567-583.

Rosenthal, S. L., Lewis, L. M., & Cohen, S. S. (1996). Issues related to the sexual decision-making of inner-city adolescent girls. *Adolescence, 31*(133), 731-739.

Sonnenstein, F. L. (1986). Risking paternity: Sex and contraception among adolescent males. In A. B. Elster and M. E. Lamb (Eds.), *Adolescent fatherhood* (pp. 31-54). Hillsdale, NJ: Erlbaum.

Stanton, B. F., Black, M., Kalijee, L., & Ricardo, I. (1993). Perceptions of sexual behavior among urban early adolescent: Translating theory through focus groups. *Journal of Early Adolescence, 13*, 44-66.

Thornberry, T. P., Smith, C. A., & Howard, G. J. (1997). Risk factors for teenage fatherhood. *Journal of Marriage and the Family, 59*, 505-522

Wright, R. E. (1994). Logistic regression. In L. G. Grimm & P. R. Yarnold (Eds.), *Reading and understanding multivariate statistics* (pp. 217-244). Washington, DC: American Psychological Association.

End note: Interested parties may request copies of the regression analyses from Dr. Joseph Donnelly. This project was made possible through the funding and support of the US Department of Health and Human Services Office of Adolescent Pregnancy Programs.

Comparison of a Physical and a Mental Disability in Employee Selection: An Experimental Examination of Direct and Moderated Effects

Denise A. Koser
Munehiko Matsuyama
Richard E. Kopelman
Baruch College

There is a growing literature on the effects of stereotyping and stigmatization among individuals with a disability. This research indicates that observers are particularly likely to stereotype and stigmatize people with mental disabilities, seeing them as violence prone and/or problematic in terms of performance. To date, though, no systematic research has been conducted comparing employee selection among applicants with a mental versus a physical disability. The present research, using an experimental simulation, posited and found that a job applicant who uses a wheelchair was more likely to be hired than an employee taking medication for depression and anxiety — (a seven-fold difference of 88% vs. 12%; $Z = 4.92$; $p < .001$). The hypothesized moderating effect of task type was not found.

The Americans With Disabilities Act of 1990 (ADA) was established to protect the rights of approximately 43 million Americans with respect to access to public services, equal employment and educational opportunities, and legal remedies in the event of discrimination. Securing equal employment opportunities for Americans with disabilities was a central goal of the ADA. Yet, despite progress in implementation, the question remains as to whether the ADA has protected the rights of all disabled individuals with respect to employment. In particular, there is growing awareness of the ADA's limited ability to aid individuals possessing mental disabilities (e.g., Rosenberg, 1998).

United States Census Bureau data suggest that the aforementioned concern is not groundless. Among Americans in the age group 21 to 64 (in 1995), the employment-participation rate for individuals without a disability was 82.1%; for those with a physical disability, the employment-participation rate was 55.2%; but for the 6 million people with a mental disability the employment rate was 41.3% (McNeil, 1997). Of course, these numbers do not speak to the issue of unemployment rate-

---

Author info: Correspondence should be sent to: Richard Kopelman, Zicklin School of Business, Baruch College, 17 Lexington Ave., NY, NY 10010

North American Journal of Psychology, 1999, Vol. 1, No. 2, 213-222.
©NAJP

-people seeking but not attaining work. When employment-seeking is taken into account, the workforce participation rate is still twice as high among individuals without disabilities (cf. Marchioro & Bartels, 1994).

The purpose of the present research is to examine whether employers are less likely to hire a mentally disabled, compared to a physically disabled, job applicant, viz., whether employment discrimination occurs among the mentally disabled. Additionally, the potential moderating effect of job type — i.e., boundary spanning versus internal — is examined. (A boundary-spanning job requires contact with outsiders, e.g., customers, suppliers.)

Although there is an extensive literature in social psychology and rehabilitation psychology demonstrating how stereotyping can lead to discrimination against people with disabilities (Dunn, 1994; Fiske, 1998; Yuker, 1994) comparing the effects of a mental versus a physical disability in employment selection remains a largely uncharted area. Wahl (1997) surveyed 1,301 individuals with mental disabilities and found pervasive negative stereotyping by others, resulting in stigmatization. According to Wahl (1997): (1) 32% of respondents said they were turned down for a job based on a psychiatric label even though they were qualified; (2) 7 out of 10 respondents said they were viewed as less competent by others once their illness was revealed; (3) roughly 33% of respondents found that coworkers and supervisors were often not supportive. Not surprisingly, 70% of respondents stated that they seldom or never experienced discrimination in employment because they did not disclose their illnesses on applications. Thus, most avoided discrimination by concealing their history of mental illness. Numerous qualitative responses were provided by Wahl, (1997), such as: the applicant who was offered a position in an engineering firm only to see the offer withdrawn after disclosure of a mental disability, and the employee who was demoted after ten years' experience, upon disclosing to his supervisor that he was suffering from a mental disability. One of the few studies comparing attitudes toward physically and mentally disabled individuals was conducted by Piner and Kahle (1984). They examined the behaviors and perceptions of thirty female undergraduate psychology students toward women who had either a mental or physical disability. The experiment used two actors, one of whom was asked either about her ongoing physical therapy, or about her ongoing psychotherapy. Results suggested that even in the absence of aberrant behavior, the actor in the mental illness vignette was perceived by the participants as "more unusual" than the actor who portrayed someone with a physical illness. Piner and Kahle concluded that their evidence: (1) supports the contention that the label of mental illness is stigmatizing by itself, even in the absence of bizarre behavior; and (2) suggests that observers need not witness aberrant behavior, they already have preconceived ideas about how mental patients will behave. While Piner and Kahle's evidence is consistent with other attitude research concerning individuals with a mental disability, the sample consisted of undergraduate students. Further, their research did not specifically address the issue of employment discrimination.

The propensity of employers choose an applicant with a physical disability over an applicant with a mental disability was examined in a survey by Greenwood, Schriner, and Johnson (1991). Rehabilitation professionals were asked to evaluate the probable reaction of a typical employer toward employing individuals with varying disabilities involving physical, mental, emotional, and communication limitations. The four employment-related variables examined were recruitment and selection, willingness to hire based on position type, work force acceptance, and work performance. Greenwood et al. found that applicants and employees with physical disabilities were expected to be viewed more favorably than those with mental, emotional, or communication disabilities on most of the four employment variables examined. In terms of willingness to hire, respondents anticipated that employers would be most willing to hire an applicant with a physical disability for managerial, sales, clerical, and technical positions. It was anticipated, in addition, that applicants with physical disabilities would experience the least amount of difficulty in workforce acceptance. With respect to work performance, respondents expected more serious employer concerns about flexibility, advancement potential, absenteeism, and tenure among people with emotional disabilities than among those with physical disabilities. One obvious limitation of Greenwood et al.'s study is that the questionnaire was not answered by someone directly charged with making employment decisions. The assumptions of rehabilitation professionals may not be isomorphic with those of actual employment decision makers.

In light of the previous research, we posited that human resource professionals would favor an individual with a physical, as compared to a mental, disability if both applicants were equally qualified for the job (Hypothesis 1).

Further, when it comes to employment, jobs can vary in numerous dimensions. The *Dictionary of Occupational Titles*, for example, classifies jobs in terms of three constructs: technical, conceptual, and people skills (e.g., U.S. Department of Labor, 1993). Whereas a back-office job typically entails very little face-to-face contact with outsiders (customers, suppliers) and may require little social contact in total, the receptionist job is clearly boundary-spanning. The receptionist is often the first contact the public has with an organization. Thus, the receptionist shapes, to some extent, the initial—and perhaps enduring—impression of the enterprise. Empirical and theoretical support for this line of reasoning has been suggested by Stone and Colella (1996) based on their literature review. Because people have particularly negative reactions to individuals with a mental disability, employees with such a disability would be less likely to make a good first impression. Moreover, because individuals with mental disabilities are widely thought to lack social skills (cf., Burton, Chavez, & Kokkaska, 1987), this would further argue against hiring an individual with a mental disability for a boundary-spanning (receptionist) position compared to an internal (credit analyst) position.

As noted, we predicted (Hypothesis 1) that human resource professionals would discriminate against an equally qualified job applicant with a mental, compared to a physical, disability. However, based on the potential moderating effect of job type, we expected that the level of discrimination would be *relatively lower* for the internal, credit analyst position—with little customer contact and low social skill demands (Hypothesis 2a) — and *relatively higher* for the boundary-spanning, receptionist position (Hypothesis 2b).

METHOD

Sample

A random sample of 200 human resource professionals was drawn, all of whom worked in financial services (i.e., finance and insurance). All potential respondents were members of the Society for Human Resource Management (SHRM), as per SHRM's Internet website. Phone calls were made to approximately 220 potential respondents in an attempt to confirm each individual's current position and work address, and to get a potential sample of 200 people. All human resource professionals were selected from a single industry grouping (financial services) in order to minimize confounding variables. The two focal positions, receptionist and credit analyst, were relevant to all potential respondents. Most of the potential respondents held the title of vice president or director.

Procedure

The 200 questionnaires were mailed in March, 1998, 100 pertaining to the receptionist position, 100 to the credit analyst position. Respondents received a brief description of both the physically, and the mentally disabled applicant and were asked to select one for the position. The two applicants had similar backgrounds, e.g., both had received satisfactory performance evaluations on their current jobs, and both appeared professional and competent during the interview. The only significant difference was that Susan Smith "uses a wheelchair," and that Mary Campbell "voluntarily disclosed that she is currently taking medication for depression and anxiety. The medication has alleviated almost all her symptoms." (A second difference was that Susan was seeking new employment because her position was being phased out; Mary was applying because she was unable to relocate with her employer to another state. This second difference was created to give a bit more realism to the two vignettes—viz., they were not virtually identical in every detail.) The two versions of the questionnaire—receptionist and credit analyst—are presented in Appendices 1 and 2.

RESULTS AND DISCUSSION

The primary results of the present research are summarized in Table 1.

TABLE 1 Preference for the Job Applicant with a Mental Versus a Physical Disability

	Type of Job		
	Receptionist	Credit Analyst	Total
	n	n	N
No. of HR Professionals Selecting Physically Disabled Applicant	37	27	64
No. of HR Professionals Selecting Mentally Disabled Applicant	4	5	9
Total	41	32	73

The overall response rate was 36.5% (73 human resource professionals completed the survey). By condition, the response rates were: receptionist, 41%; credit analyst, 32%, a difference that was not statistically significant ($Z = 1.32$). Of the 73 human resource professionals who responded, 64 of them (87.7%) preferred to hire the physically disabled applicant; 9 respondents (12.3%) selected the applicant with a psychiatric disability.

To test the hypotheses statistically, a Z-test of the difference between proportions was performed. With respect to overall selection bias (Hypothesis 1), the Z statistic was 4.92 ($p \leq .001$). The hypothesis that human resource professionals would be less inclined to hire a mentally disabled applicant, rather than a physically disabled one, was supported. As expected, the main effect was significant for both types of jobs: receptionist, ($Z = 3.98$, $p < .001$; credit analyst ($Z = 2.93$, $p < .01$).

The hypothesized moderating effect of job type was not found (Z = .748, ns). Hence, Hypotheses 2a and 2b were not supported. The most that can be said, though, for Hypotheses 2a and 2b is that the results were in the predicted direction: the mentally disabled applicant was *relatively less* discriminated against for the credit analyst job (selected 15.6.% of the time) and *relatively more* discriminated against for the receptionist job (selected only 9.8% of the time).

Responses to the open-ended question asking "why?" were salient. Among the 64 respondents who chose the physically disabled candidate 24 (37.5%) gave the following as reasons (largely expressing doubts about the mentally disabled candidate): 1. Potential performance problems (20.8%); 2. Concern about absenteeism (16.7%); 3. Potential for unpredictable behavior (16.7%); 4. Incapable of handling stressful situations (12.5%); 5. Difficulty identifying a reasonable accommodation (8.3%); 6. Perception that the physically handicapped applicant will have a harder time finding a job than the mentally handicapped applicant (8.3%); 7. Employing a visibly handicapped person (that is, one with a physical disability) shows the public that the organization is an "equal opportunity employer" (4.2%); and 8. Fear that applicant may not take her medication (4.2%). Clearly, among the human resource professionals who responded, the vast majority (80%) expressed performance-related concerns.

Although the tendency for negative stereotyping and stigmatization of individuals with mental disabilities has been firmly established, no research to date has attempted to find out the extent to which this translates into job discrimination. More specifically, no research has examined the responses of decision makers in an employee selection context: rather, opinions have been obtained from college students, rehabilitation professionals, and the disabled, themselves.

As predicted, the main effect was confirmed: there was a tendency to prefer a job applicant with a physical, compared to a mental, disability. Although the posited moderating effect of job type was in the predicted direction, the data lacked sufficient statistical power. (Given the low base rate for selecting an individual with a mental disability, the sample size would have had to have approached 300 to achieve significance.)

The most serious weakness of the present research is that real people did not apply for the positions, the experimental stimuli were but written descriptions of people. A paper-and-pencil study cannot demonstrate what HR professionals would really do when faced with flesh and blood applicants. The latter type of demonstration is extremely difficult to arrange. The ADA notwithstanding, human resource professionals demonstrated biases similar to those found previously. A field study with greater mundane realism might yield different results, but we are not optimistic.

Another potential threat is the difference cited in seeking employment. While we see no *a priori* reason why this difference should be material, future research should employ a counterbalanced design in this regard and with respect to order effects. Yet another problem is the use of the word "almost" when describing the effect of the medication taken by the mentally disabled job applicant. Even if "almost" all of the symptoms are alleviated, there may be questions as to those symptoms which are not. No qualifier word was used to describe the suitability of the physically disabled candidate. Future studies using our scenarios should omit "almost." Further, we would hope to see research that: has a larger sample size; examines multiple psychiatric conditions; takes into account individual differences in raters (e.g., attitudes toward disabled persons); and which employs multiple ratings as criterion variables, in addition to a forced choice. The use of a comparison group that was not disabled would help in estimating the magnitude of discrimination.

With regard to practical implications, we do not think that discrimination can, realistically, be legislated away. Perhaps as an initial step it might be useful for recruiters/employers to receive information about various types of mental disabilities, and their performance-related effects (Yuker, 1994). Not all persons with psychiatric problems present an elevated risk of workplace violence or performance problems.

In a more positive vein, a recent SHRM (1998) publication indicated that with the recent tightening of the labor market, new opportunities have opened up for "the nation's largest minority"--people with disabilities. Hopefully, the life-giving force of employment will be extended to individuals with mental disabilities, too.

REFERENCES

Burton, L.F., Chavez, J.A. & Kokaska, C.J. (1987). Employability skills: A survey of employers' opinions. *Journal of Rehabilitation, 53* (3), 71-74.

Dunn, D.S. (Ed.). (1994). Psychological perspectives on disability [Special issue]. *Journal of Social Behavior and Personality, 9*, No. 5.

Fiske, S.T. (1998). Stereotyping, prejudice, and discrimination. In D.T. Gilbert, S.T. Fiske, & G. Lindzey (Eds.), *Handbook of Social Psychology* (4th ed. pp. 357-411). New York: McGraw-Hill.

Greenwood, R, Schiner, K. F., & Johnson, V. (1991). Employer concerns regarding workers with disabilities and the business-rehabilitation partnership: The PWI practitioners' perspective. *Journal of Rehabilitation, 57* (1), 21-25.

McNeil, J. (1997). *One In 10 Americans Reported a Severe Disability in 1994-95, Census Bureau Reports*. Census Bureau's Americans With Disabilities, 1994-95.

Piner, K. E. & Kahle, L. R. (1984). Adopting to the stigmatizing label of mental illness: Forgone but not forgotten. *Journal of Personality and Social Psychology, 47*, 805-881.

Rosenberg, G. (1998, November 7). When the mind is the matter: Mental disability cases pose painful workplace issues. *The New York Times*, C1-2.

SHRM. (1998). Finding new talent in a tight market. *Mosaics*, 4 (2): 1-7.

Stone, D., & Colella, A. 1996. A model of factors affecting the treatment of disabled individuals in organizations. *Academy of Management Review*, *21*, 352-401.

U.S. Department of Labor, Employment and Training Administration. (1993). *Dictionary of Occupational Titles*. Washington, D.C.: U.S. Department of Labor.

Wahl, O. 1997. *Consumer experience with stigma: results of a national survey.* National Alliance for the Mentally Ill Campaign to End Discrimination,. Washington, D.C.

Yuker, H.E. (1994). Variables that influence attitudes toward people with disabilities: Conclusions from the data. *Journal of Social Behavior and Personality*. *9*(5), 3-22.

APPENDIX 1: Questionnaire for Receptionist Position

A Receptionist position has become available in your organization. The Receptionist you hire will be responsible for greeting and directing visitors, answering incoming telephone calls, taking messages for employees, and occasionally typing interoffice memos on the computer. The position requires at least two years of prior work experience as a receptionist and at least an Associate's degree in Business.

Based on your review of the resumes received and reference checks, you have narrowed your choices down to two individuals who qualify for the position. You interviewed both candidates which revealed the following information:

_____Susan Smith worked as a Receptionist for an organization similar to yours for three years. During that time period she received "satisfactory" performance evaluations each year. Ms. Smith has applied to your company because her current employer is phasing out her position. Ms. Smith appeared competent and professional. During the interview, it was apparent that Ms. Smith uses a wheelchair.

_____Mary Campbell worked, for 3 years, as a Receptionist for an organization similar to yours. She received "satisfactory" performance evaluations annually. During the interview, Ms. Campbell voluntarily disclosed that she is currently taking medication for depression and anxiety. The medication has alleviated almost all of her symptoms. She has applied to your organization because her current employer is relocating to another state and it will be impossible for her to relocate with them. Ms. Campbell appeared competent and professional during the interview.

Which individual would you hire for the position? Please respond by placing a checkmark next to the individual's name above. Please choose one candidate; do not check both or neither.
Why? (Optional)

APPENDIX 2: Questionnaire for Credit Analyst Position

A back office Credit Analyst position has become available in your organization. The position requires a Bachelor's degree in Business and at least two years of prior work experience.

Based on your review of the resumes received and reference checks, you have narrowed your choices down to two individuals who qualify for the position. You interviewed both candidates which revealed the following information:

_____Susan Smith worked as a Credit Analyst in a company similar to yours for the last three years. During that time period she received "satisfactory" performance evaluations each year. Ms. Smith has applied to your company because her current employer is phasing out her position. Ms. Smith appeared competent and professional. During the interview, it was apparent that Ms. Smith uses a wheelchair.

_____Mary Campbell worked, for the last three years, as a Credit Analyst in an organization similar to yours. She received "satisfactory" performance evaluations annually. During the interview, Ms. Campbell voluntarily disclosed that she is currently taking medication for depression and anxiety. The medication has alleviated almost all of her symptoms. She has applied to your organization because her current employer is relocating to another state and it will be impossible for her to relocate with them. Ms. Campbell appeared competent and professional during the interview.

1) Which individual would you hire for the position? Please respond by placing a check mark next to the individual's name above. Please choose one candidate; do not check both or neither.

2) Why? (Optional)

The Real and Perceived Impact of the Abbreviated 1998-1999 NBA Season on the Final Standings

Diane D. Ashe
Valencia Community College

Lynn E. McCutcheon
United States Sports Academy

The 1998-1999 NBA season was reduced from the original 82 games to 50. About 35% of a sample of 105 community college students indicated their belief that reducing the season from 82 to 50 games would result in a large or very large change in the standings. Those who were interested in NBA basketball were more likely to believe the change in standings would be large than those who were uninterested. Wins and losses from the 1996-1997 and 1997-1998 seasons were analyzed under 3 conditions (1st 50 games, last 50 games, and random 50 games). Each team was ranked under each condition and these 50-game rankings were correlated with the final rankings for that 82-game season. The Spearman *r* correlations were all statistically significant at the .0001 level, suggesting that the 1998-1999 season was an adequate sample of the full season. Ways for using this example in teaching research methods and statistics were discussed.

The 1998-1999 National Basketball Association (NBA) season was reduced from the usual 82 games to 50 games due to player-management conflicts. It is reasonable to assume that many athletes and fans were concerned that the abbreviated season would *not* accurately reflect the final rankings that would have resulted from a full season. Former Orlando Magic star Penny Hardaway was quoted as saying, "It was an awkward year with the lockout and playing so many games in so short a time" (Johnson, p. C1). According to attribution theory, in which people assign causes or explanations for events, it would be expected that athletes who were disappointed with their final standings may point to the abbreviated season as an explanation for their perfomance

Attribution theory has been widely applied to sports, using Weiner's (1985) reformulation of Heider's (1958) original theory. Internal

---

Author info: Correspondence should be sent to: Dr. Diane Ashe, Psychology Dept., Valencia Community College, Orlando, FL

North American Journal of Psychology, 1999, Vol. 1, No. 2, 223-228.
© NAJP

attributions are related to factors that are perceived to be under the control of the athlete or team. External attributions are reasons which are beyond the athlete's control, such as luck or a bad call by an official. In this context, teams or athletes who point to an abbreviated season as a potential cause for the outcome would be applying an external attribution.

The purpose of the current study was to determine how well 3 overlapping 50-game samples would predict the rankings in an 82-game season. Were the final rankings, based on the 50 games played in the 1998-1999 season, an accurate reflection of the final rankings teams would have attained in a full 82-game season? According to the sampling formula used by Leavitt (1991, p. 156), a sample of 31 would be adequate for prediction when the population size is 82. Since a 50-game sample is considerably larger than 31, it was hypothesized that the final rankings for the 1998-1999 season would have been significantly correlated with rankings obtained in a full season. To test this hypothesis indirectly an archival review of the 2 previous NBA seasons was performed. For each season, three 50-game samples were obtained and the rankings were correlated with the final rankings. It was hypothesized that these correlations would be statistically significant, therefore suggesting that the 1998-1999 final rankings were an accurate reflection of what would have been obtained had there been a full season.

METHOD

An initial survey of 105 community college students from central Florida (mean age = 21.1 years) was conducted to determine their beliefs regarding the shortened NBA season. In addition to basic demographic questions, they were also asked to respond to the following questions:

1. *Rate the extent of your interest in basketball as played in the National Basketball Association (NBA) on a scale from 1-7.*
2. *Please answer the following question by circling the number that best represents your opinion. If you believe that the amount of change in the rankings caused by reducing the season from 82 to 50 games would be very large for the average team (for example, going fro 8th place to 13th place or vice versa), then circle "7." If you believe that the amount of change in the rankings by reducing the season from 82 to 50 games would be very small for the average team (for example, going from 13th place to 14th place or vice versa), then circle "1." If you believe that the amount of change in the rankings for the average team would be relatively large, circle "5" or "6." If you believe that the amount*

of change in the rankings for the average team would be relatively small, circle a "2" or "3."

Game outcomes in consecutive order were obtained for each NBA team during the 1996-1997 and 1997-1998 seasons and used to determine team rankings for 3 conditions. These conditions were an analysis of the first 50 games only, the last 50 games only, and a random sample of 50 games. The mean difference between 82-game standing and each of the three 50-game standings was computed. Each of the three 50-game standings was also correlated with the final season standing for both seasons.

RESULTS AND DISCUSSION

The 1996-1997 mean differences between 82-game rankings and first 50, last 50, and random 50 rankings were 2.06, 1.62, and 1.90 respectively. The 1997-1998 mean differences were 1.41, 1,14, and 2.17 respectively. If we use the mean of these six means we could say that the result of playing the additional 32 games is a change in the standings of only about 1.72 for the average NBA team. In other words, by the time 50 games have been played there is considerable stability in the rankings. Playing an additional 32 games typically results in small changes for the average NBA team.

Within the framework of Question 2 a *real* mean change of less than two places suggests that the most accurate guess a student could make would be a "2," described as a "relatively small change." However, 35% of the sample clearly overestimated the amount of change in the standings attributable to an extra 32 games.

We compared scores on Question 2 for the 57 participants who indicated an interest in NBA basketball (circled "5," "6," or "7") versus the 34 who were uninterested (circled "1," "2," or "3"). The mean score on Question 2 for interested participants was 3.88, as compared to 2.76 for uninterested participants, t (89) = 2.80, p <.01.

Why were NBA fans especially likely to overestimate the amount of change in the standings? Our guess is that toward the end of any season a large share of sports media attention falls on those few teams that are trying to move up (or avoid moving down) in the standings. Thus we are likely to hear or read about the team that is currently tenth but still has a chance for eighth place (and the playoffs) if it can just win its last three games. Sports journalists tell fans that *every* game can greatly influence the standings. By ignoring the many teams that could win or lose their last three games without a change in the standings, the media perhaps unwittingly create the illusion that large changes in the standings typically follow the outcome of a small number of games.

The outcome of basketball games is somewhat atypical of the questions studied by behavioral scientists. However, it is a topic of some interest to the public, perhaps especially so to the young people who populate college classrooms. We present this study as an illustration of how sample size and population must be considered jointly. It is our hope that professors who teach statistics or research methods will find this illustration interesting enough to use in their classrooms.

It dawned on us that we could increase the usefulness of our study to professors who teach tests and measurements by reframing it as a correlation problem. With that thought in mind we calculated the

TABLE 1 1997-1998 NBA Team Standing Under Four Conditions

Team	1st 50 Games	Last 50	Random 50	82-game Tot
Atlanta	9	10	11	10
Boston	20	22	17	20
Charlotte	9	9	8	9
Chicago	3	2	4	1
Cleveland	14	13	17	11
Dallas	27	23	20	24
Denver	29	27	29	29
Detroit	20	19	20	19
Gold State	28	25	27	25
Houston	17	17	14	17
Indiana	2	3	8	5
L.A. Clippers	25	27	26	27
L. A. Lakers	3	3	2	3
Miami	8	7	5	8
Milwaukee	17	21	22	20
Minnesota	14	11	15	13
New Jersey	12	14	12	14
New York	12	16	13	14
Orlando	19	17	22	17
Philadelphia	23	19	17	22
Phoenix	6	7	7	6
Portland	9	12	10	12
Sacramento	22	23	24	23
San Antonio	6	5	5	6
Seattle	1	6	1	3
Toronto	25	25	25	28
Utah	3	1	3	1
Vancouver	24	27	28	25
Washington	16	14	15	16

Spearman *r* correlation coefficient between each of the 50-game standings and the 82-game standings for both seasons prior to the abbrieviated 1998-1999 season. The 1996-1997 correlations between 82-game standing and first 50, last 50, and random 50 standings were .95, .97, and .97, respectively. The correlations between 82-game standing and first 50, last 50, and random 50 standings for the 1997-1998 season were .98, .98, and .95, respectively. All correlation coefficients were significant at the .0001 level.

Table One presents the four sets of standings for the 1997-1998 season. This will enable professors to use these sets of actual NBA standings as examples of data that correlate high and positive.

David Robinson is a star player for the current NBA Champion San Antonio Spurs. In a *Sports Illustrated* article he co-authored, Robinson stated, "Some people said that whichever team won the title should have an asterisk beside its name, because of the shortened NBA season and the fact that Michael Jordan and the Bulls broke up" (Robinson & Taylor, 1999, p. 40). Based on the results of this study, perhaps only half an asterisk is necessary.

REFERENCES

Heider, F. (1958). *The psychology of interpersonal relations.* New York: Wiley & Sons.

Johnson, L. C. (1999, May 16). Iverson, Snow send Magic to off-season. *The Orlando Sentinal*, pp. C1, C9.

Leavitt, F. (1991). *Research methods for behavioral scientists.* Dubuque, IA. William C. Brown.

Robinson, D., & Taylor, P. (1999, July 5). Mission accomplished. *Sports Illustrated*, *91*, (1), 36-41.

Weiner, B. (1985). An attribution theory of achievement motivation and emotion. *Psychological Review*, *92*, 548-573.

upcoming exam. Moreover, PrTOs placed a higher value on the social event than the instrumental academic sub-goal of studying. These researchers suggest that the FuTOs place a greater valence on the short-term academic sub-goals that will lead to positive academic outcomes than PrTOs and hence are better able to achieve the concomitant academic rewards of sub-goal behavior. The present study explores the different values that PrTOs and FuTOs derive from academic sub-goal behavior by testing the hypothesis that the differential levels of sub-goal utilization of the two groups result in different levels of perceived competence in and a greater evaluation of academic behaviors. The basic tenets of self-determination theory provide the theoretical basis for this assertion.

According to Deci and Ryan's self-determination theory of intrinsic motivation (1985,1991), behaviors have self-motivating properties if they activate basic psychological needs of competence. The need for self-efficacy (Wood & Bandura, 1989) also involves competence, and is used in the following discussion to reflect competence-based motivations. Since self-efficacy needs differentially influence intrinsic motivation to academic tasks, we contend that FuTOs and PrTOs derive differing levels of self-efficacy information from academic goal setting and hence orient to such academic sub-goal tasks differently. Specifically, we theorize that FuTOs derive self-efficacy in their ability to reach desired academic outcomes by using sub-goals that provide this efficacy information at regularized intervals in their academic experiences while PrTOs do not.

Self-efficacy has been demonstrated to hold explanatory power over a wide array of behavioral domains. Most relevant to our discussion here is the effect of self-efficacy on intrinsic motivation through academic self-regulation. Self-regulation, in academic contexts, refers to the processes whereby "A...students become masters of their own learning" (Zimmerman & Schunk, 1989). Carver and Scheier (1981) described the process of self-regulated learning as a self-oriented feedback loop. Students who are self-regulated learners utilize proximal sub-goals in order to gauge the effectiveness that present behaviors have on influencing long-term outcomes. According to social cognitive theory, proximal sub-goals provide individuals with a standard by which to gauge their progress, and these resulting percepts of efficacy or competence enhance intrinsic motivation (Zimmerman, Bandura & Martinez-Pons, 1992).

Several researchers have noted that short-term, proximal goals enhance the self-regulation process by directing one's actions and by providing valuable self-efficacy information that sustains effort and enhances long-term motivation and performance (Carver & Scheier, 1982). Other researchers have presented a series of experimental studies which suggest that teaching low-achieving students to set proximal sub-goals leads to increased self-efficacy, improved performance, and increased intrinsic interest in the task being undertaken (Bandura & Schunk, 1981; Schunk, 1991). Stock and Cervone (1990) extended these results when they found that assigning subjects proximal sub-goals in a complex problem-solving task led to increased percepts of self-efficacy, satisfaction with performance, and task persistence. Our investigation extended the findings of the above researchers by directly measuring dominant temporal orientation and exploring the task evaluation process across the two temporal orientation groups.

The current investigators hypothesized that the utilization of sub-goals in an academic task would increase the level of positive orientation toward the academic task across the two time orientation groups. Accordingly, we predicted a main effect for an experimental manipulation of sub-goal utilization in a hypothetical academic scenario. We did not expect a main effect for dominant time orientation. Since research suggests that FuTOs use academic sub-goals more frequently than PrTOs, we also hypothesized that in the sub-goal experimental condition, FuTOs would report a greater level of self-identification with this strategy than the PrTOs in the same condition. Finally, we hypothesized that PrTOs would report a less negative orientation towards a no sub-goal condition than FuTOs. Accordingly, the present researchers hypothesized that there would be an interaction between dominant time orientation and experimental sub-goal condition in this study.

METHOD

Participants

Eighty-five introduction to psychology students (67.2% female, 32.8% male) attending a northeastern liberal arts college were participants in this study. The sample was not ethnically diverse but was representative of the demographics of the college from which the sample was drawn (82.1% White, 11.9% African-American, 1.5% Asian, 1.5% Latino, 3% Multi-racial). Participants completed a time orientation scale as a part of subject pool pre-testing and were selected on the basis of their classification as present time oriented (PrTO) or future time oriented (FuTO). Dominant time orientation was defined as a student scoring on the top 33rd percentile on the sub-scale of dominant time orientation and the bottom 33rd percentile of the alternate time orientation. This procedure is recommended by Jones et al. (1999). There were no reliable associations between time orientation classification and gender, so gender was not used as an independent variable in this investigation.

Since participants completed several psychological measures as a part of early semester pre-testing, it is highly unlikely that they were aware of the basis of their selection in the present study.

Procedure

Investigators contacted students who were classified as PrTO (n=48) or FuTO (n=37) through a campus mailing and asked them to participate in a study examining college students' behaviors and preferences. The following instructions were provided to the students who agreed to participate (80% of those selected through pre-testing agreed to participate):

In the scenario that follows, we want you to imagine that you have found yourself in the following situation. Even if this is a scenario in which you are not likely to find yourself, imagine that this event is one with which you must contend. Carefully read the scenario described, and briefly answer the set of questions that follow the scenario, based on how you would likely think, feel, and behave given the described circumstances. There are no right or wrong answers for this task. We want you to carefully provide the responses that most accurately reflect your likely reaction. Do not mull over these responses. We believe that your first response is generally your best response, so we want you to record your *immediate* reaction without looking back over the scenario. When you have completed each page, turn to the next page and follow the next set of instructions. Thank you for your assistance in this research project. Please indicate your social security number on the bottom of this page. Please note that we are requesting this information for identification purposes only. Any responses to any of these questions will not be identified with you personally in any way.

The participants then read a vignette in which they have been assigned a specific academic task: the completion of a comprehensive term paper that is due at the end of a fourteen week semester. Participants in the procrastination condition were instructed to imagine themselves in a situation in which they only became aware of the assignment with two weeks remaining in the semester and that they were under academic obligation to complete the assignment in this time frame. In contrast, students in the experimenter sub-goal condition were told to imagine that they followed a list of week-by-week proximal sub-goals in order to complete the major term paper assignment in a systematic fashion. A control (no-instruction) group was given a description of the term paper (fourteen week) assignment with no specific instructions about how to proceed. After reading through each scenario, participants were instructed to respond to a questionnaire evaluating their imagined overall evaluation of the task. Participants were treated in accordance with the APA designated ethical standards and codes of conduct (American Psychological Association, 1992).

Materials

Temporal Orientation Scale. Researchers assessed participants' temporal orientation with the Temporal Orientation Scale (Jones et al., 1999). The TOS is a twenty-six item scale which assesses the degree to which individuals are cognitively, affectively, and behaviorally oriented to the past, present, and future. Subjects are asked to respond to a number of statements which describe cognitive, affective and behavioral orientation to the present or future on a 7-point rating scale ranging from 1 (Not true) to 7 (Very true). The mid- point for the scale, 4, is labeled "Somewhat true." The scale has been extensively investigated and has been found to be reliable and valid (Jones, Banicky, Pomare & Lasane, (1999). Cronbach alphas for the future and present sub-scales were .81 and .68, respectively. The present and future sub-scales showed test-retest reliabilities of .71 and .73, respectively.

Competence in Academic Task. The overall orientation to the academic task was assessed by asking subjects to report their subjective state after completing the task. As mentioned above, subjects were asked to respond their imagined level of agreement with statements from the Behavioral Preferences Checklist (Lasane, Loebe, and Dinsenbacher, 1999). The items sampled represented measurements of perceived efficacy ("I would feel confident in my ability to do a good job on this assignment."), psychological state ("I would feel very anxious in the scenario described above."), and intrinsic motivation ("I would feel that the situation described above would be dull and a waste of time"). Subjects responded using a 7-point rating scale ranging from 1 (extremely uncharacteristic of the way that I would feel) to 7 (extremely characteristic of the way that I would feel) with 4 as a neutral rating (neither characteristic or uncharacteristic of the way that I would feel). About half of the ten items used were negatively worded to prevent an acquiescent bias. The total score on this measure represented the degree to which the participant reported overall positive competence and positive orientation in the task. The ten items showed acceptable internal consistency (Cronbach alpha =.79).

Finally, as a way of verifying that individuals in the two temporal orientation groups vary in their actual use of these academic sub-goal behaviors, participants were asked to indicate the likelihood that they would complete the assignment in the manner described in the scenario condition to which they had been assigned. Researchers used a 1 (0 out of 10 chance) to 7 (10 out of 10 chance) scale with 4 (5 out of 10 chance) as the middle point to assess the participants' self-reported likely behavior. This measure was used as a check of our assumption that PrTOs and FuTOs differ in their academic sub-goal behavior.

RESULTS

Self-Reported Academic Behaviors

It was postulated that there would be different levels of sub-goal utilization between the present time oriented subjects and the future time oriented subjects. The researchers expected, therefore, that PrTOs would indicate that they would more likely use the strategy employed in the procrastination condition and the no instructions condition and that the FuTOs would indicate that they would more likely use the strategy employed in the sub-goal condition.

There was a main effect of task condition on the likelihood of performing the scenario strategy, F (2, 78) = 25.26, $p < .01$. Overall, participants, irrespective of dominant time orientation, reported that there was significant likelihood differences in the probabilities that they would find themselves in each of the scenarios. Tukey's HSD post-hoc analyses suggest that the participants reported that they were more likely to actually find themselves in the procrastination condition than the experimenter sub-goal condition and that they were more likely to be in the no-instruction condition than the experimenter condition. No differences emerged between the participants' report of their likelihood of being in the no-instruction (M = 6.11) versus procrastination condition (M =5.56). This suggests that students who do not set sub-goals are likely to engage in academic procrastination. This is an important demonstration since a possible confound that exists between the experimental sub-goal condition and the procrastination condition is the amount of time that subjects would have to complete the academic tasks assigned (i.e., two week versus fourteen weeks). The no-instructions condition was included to control for this potential confound. The fact that subjects in the procrastination and no-instruction conditions reported equal likelihood of adopting these scenarios helps to rule out the possibility that it may be the time to complete the assignment, not the presence of sub-goals, that contributes to perceptions of academic competence.

There was a main effect observed for dominant time orientation, F (1, 78) = 7.59, $p<.01$. Future time oriented subjects identified with the behavioral scenarios, irrespective of condition, more so than the present time oriented subjects. No reliable interaction emerged between dominant temporal orientation and sub-goal condition, F (2, 78)= 1.91, p

>.05. However, in accordance with the investigators' assumptions, future time oriented subjects in the sub-goal condition were more likely to identify with the sub-goal condition than present time oriented subjects in this condition, *t* (28) = 3.20, *p*<.01. Unexpectedly, PrTOs and FuTOs did not differ in their identification with the procrastination scenario, *t* (34)=.63, *p*>.05. The means for these analyses are summarized in Table 1.

Table 1 Likelihood of This Method of Task Completion as a Function of Time Orientation and Sub-Goal Condition

	Present			Future		
Scenario Condition	M	SD	N	M	SD	N
Control	4.81	.72	7	4.19	.80	11
Procrastination	5.43	1.59	23	5.77	1.42	13
Experimental	2.67	1.41	18	4.33	1.37	12

Perceived Competence as a Function of Time Orientation and Sub-Goal Condition.

Support was found for the major hypothesis regarding academic competence. Students in the three conditions reported significantly different levels of academic competence when imagining the academic problem solving task, *F* (2, 79) =13.35, *p*<.001. Moreover, post-hoc analyses, using Tukey's HSD, revealed that the students who were assigned to the condition with discrete sub-goals reported greater competence (M =4.55) than the students in the procrastination condition (M = 3.54). There were no significant differences between the competence ratings of the students in the sub-goal condition (M =4.55) and those in the no-instructions condition (M =4.43) when one did not consider dominant time orientation. We did not expect nor did we observe a main effect for dominant time orientation, *F* (1, 79)= .28, *p* >.05.

We found support for our key prediction: An interaction between time orientation and sub-goal condition was observed, *F* (2, 79)=3.24, *p* <.05. The pattern of means and post hoc analyses suggest that the means for the academic competence evaluation vary in the three experimental conditions as a function of dominant temporal orientation. As predicted, FuTOs perceived the greatest competence in the sub-goal condition (M =4.88), while PrTOs reported the greatest competence in both the sub-goal (M =4.34) and no-instructions conditions (M =4.81). These results are summarized in Table 2.

TABLE 2 Perceived Competence as a Function of Time Orientation and Sub-Goal

	Present			Future		
Scenario Condition	M	SD	n	M	SD	n
Control	4.81	.73	7	4.19	.80	11
Procrastination	3.66	.97	23	3.32	.93	13
Experimental	4.34	.87	18	4.88	1.09	13

DISCUSSION

These data confirmed the key predictions of the study. Consistent with our hypotheses, dominant temporal orientation is a reliable predictor of student's self-reported use of academic sub-goals. FuTOs reported being more likely to use the strategies that were described in the week-by-week sub-goal condition. This self-regulated academic goal-setting has clear advantages in educational settings that reward self-motivated students with good grades and other non-curricular occupational opportunities. Consistent with previous research that has examined the motivational profile of PrTOs, these students are not likely to report engaging in short-term academic goal setting. Contrary to our hypotheses, there were no reliable differences between the PrTOs and FuTOs in their identification with the "last minute to prepare" scenario. In fact, the means were in a direction that would be opposite to that hypothesized. It was expected that PrTOs would be more likely to identify with the no sub-goal condition, but these results suggest that they are only more likely to fail to identify with the sub-goal condition. In fact, these data show that FuTOs are more likely to self-identify with *both* of the sub-goal scenarios presented to a greater degree than PrTOs.

The greater likelihood of FuTOs to identify with both academic scenarios requires further investigation. While this finding was not related to our key predictions in the study, it may provide support for what research exploring academic behavior between FuTOs and PrTOs has suggested: FuTOs may be more self-schematic on academic dimensions. The FuTOs' greater identification of each of the scenarios may reflect a greater degree of cognitive processing of academically relevant experiences and behaviors. Future research should correlate the self-reports of FuTOs and PrTOs on these academic behaviors with peers, teachers, and friends. It would be interesting to note whether or not there is greater accuracy in the recollection of "flattering versus unflattering" academic dilemmas. Perhaps the FuTOs who identified with the no-sub-goal condition processed such experiences at a deeper level of processing and have it as a more salient memory than PrTOs who report such behavior as consistent with their past experiences. Another explanation would be that PrTOs, whose academic procrastination and underachievement is well established, may employ self-handicapping strategies that have self-protective functioning when these students attribute causes for academic underachievement relative to their FuTO peers. Memory for academically instrumental behaviors as a function of dominant time orientation should be explored in future studies.

Support was also found for the hypothesis that proximal sub-goals lead to increased feelings of competence and the overall positive evaluation of an academic task. Students who were given week-by-week plans of how to complete an important academic assignment were more likely to report a positive orientation toward the academic task. This finding seems to support the assertion that proximal sub-goals provide individuals a standard by which to gauge their progress and that these standards cultivate feelings of self-efficacy. Since self-efficacy is a predictor of intrinsic motivation, the specific strategies given to students may actually relieve performance anxieties and cultivate a positive orientation to the task itself. This prediction must be taken with caution, however. According to the self-determination perspective, individuals' intrinsic motivation to tasks is also limited by the degree of autonomy that they feel with respect to the task. Increasing external standards against which students may gauge their progress may in fact increase percepts of self-efficacy. However, this increased efficacy may be juxtaposed to the diminished level of autonomy support brought out by the clear external standards dictating subject behavior. Future research should explore the relationship between increased self-efficacy and increased autonomy support. If these two psychological needs are in fact inversely related, then greater care should be taken to find the happy medium in academic tasks.

Our research did not observe a main effect for dominant time orientation on the perceived competence and positive orientation to the academic tasks. Although this null result was expected, it requires further discussion as it has important implications on the motivational factors influencing these two groups of students. Overall, PrTOs and FuTOs did not differ in their motivation to the two tasks when one ignores the effect of sub-goal condition. Since robust achievement differences have been observed from PrTOs and FuTOs, and the former group consistently self-reports using less structured academic sub-goals, these results suggest that in the absence of intervention, these students will continue to underperform in academic contexts that value and reward time structure and proximal goal setting. This finding may be supported by the notion discussed above that PrTOs seem to view their academic behavior through a lens of optimism and self-serving (self-protective) bias. If there is no perception that one's academic behaviors yields less than optimal academic rewards, then there will be little motivation for change. Another possibility that emerges is that PrTOs may consider the "academic self" less central to their self-concept. In this line of reasoning, the academic underachievement they experience relative to their peers may be offset by important achievements in other unrelated contexts. In exploring the motivational differences between PrTOs and FuTOs, future research should explore aspects of self-complexity (Linville, 1985) and processes described in self-affirmation theory (Steele, 1988).

The investigators' key prediction was confirmed by these data. The profile of PrTOs and FuTOs advanced by previous research was supported by an interaction between sub-goal condition and dominant orientation on the academic competence/positive evaluation measure used in this study. Future time oriented participants experienced a significantly greater level of academic comfort than present time oriented participants as a function of scenario condition. Moreover, PrTOs' percepts of competence seem substantially less compromised than FuTOs when they were given no sub-goals and were left to complete an important academic task in a very brief period or when they were given no specific instructions at all for a longer period of time. These results offer important insights into several aspects of student goal-setting. First, since PrTOs students do not derive comparable levels of academic competence from setting short-term sub-goals and since the use of these sub-goals are an important cornerstone of our educational institutions, further research should examine the aspects of academic tasks that could increase the PrTOs' investment in academic goal setting. Research by Lasane and Jones (in press) has shown that FuTOs are more likely to derive intrinsic orientation from academic tasks, and these results provide preliminary support for sub-goals as an important mechanism to explain this relationship. There is also support for the finding that FuTOs are more vulnerable to anxiety and discomfort when they are placed in academic dilemmas characterized by procrastination. Future research should examine the perceived levels of stress and anxiety as a function of situational constraints on academic sub-goals. Counseling centers and student development programs might create programs to deal with these specific barriers to FuTO's academic success and psychological adjustment..

In contrast, PrTOs are not motivated by academic sub-goals, and these sub-goals do not seem to enhance the attractiveness of the goal setting process through eliciting a sense of increased task efficacy. Since sub-goal behavior is incongruous with their behavioral tendencies, perhaps they have not received the performance rewards afforded by these academically instrumental strategies. Research generated by the tenets of self-efficacy theory supports the notion that self-efficacy is primarily and most strongly influenced by performance attainments. It is not clear from the studies that have been conducted whether PrTOs fail to be persuaded by the instrumental value of sub-goals or whether these students are differentially drawn to the competing events that interfere with academic sub-goal behavior. Previous research by Lasane and Jones (1999) suggests that the latter is true, but further research should investigate the former.

The questions raised by the present investigation are empirically testable ones that have the strong potential to further test and refine several major theoretical traditions of general motivation: Self-determination theory, self-efficacy theory, self-affirmation theory, self-serving attributional bias, and self-handicapping. These theories converge on self-regulated academic behaviors of college students who fall at different points along a continuum of time orientation. Since using the time orientation construct has been so fruitful in revealing distinct academic achievements of college students, there is strong promise that this research area may produce useful interventions in student development programs. Additionally, benefits may also relate to other areas such as health psychology (i.e., stress management), industrial-organizational psychology, and counseling/clinical concerns. The present investigators are currently exploring a broad range of the questions raised herein in an effort to elucidate the time-related behaviors that mediate student motivation.

REFERENCES

American Psychological Association. (1992). Ethical principles of psychologists and code of conduct. *American Psychologist, 47,* 1597-1611.

Bandura, A., & Schunk, D.H. (1981). Cultivating competence, self-efficacy, and intrinsic interest through proximal self-motivation. *Journal of Personality and Social Psychology, 45,* 1017-1028.

Carver, C.S., & Scheier, M.F. (1981). *Attention and self-regulation: A control theory approach to human behavior.* New York: Springer-Verlag.

Carver, C.S., & Scheier, M.F. (1982). Outcome expectancy, locus of attributions for expectancy, and self-directed attention as determinants of evaluations and performance. *Journal of Experimental Social Psychology, 18,* 184-200.

Deci, E.L. & Ryan, R.M. (1985*). Intrinsic motivation and self-determination in human behavior.* New York: Plenum Press.

Deci, E.L. & Ryan, R.M. (1991). A motivational approach to self: Integration in personality. In R. Dienstbier (Ed.*) Nebraska Symposium on Motivation: Vol. 38. Perspectives on Motivation (pp. 237-288).* Lincoln, NE: University of Nebraska Press.

DeVolder, M. & Lens, W. (1982). Academic achievement and future time perspective as a cognitive-motivational concept. *Journal of Personality and Social Psychology, 52,* 1182-1194.

Gjesme, T. (1980). Dimensions of future time orientation in test anxious individuals. *Archives of Psychology, 133,* 277-291.

Gjesme, T. (1981). Is there any future in achievement motivation? *Motivation and Emotion, 5,* 115-137.

Gjesme, T. (1983). On the concept of future time orientation: Considerations of some functions and measurements implications. *International Journal of Psychology, 18,* 443-461.

Jones, J.M. (1988). Cultural differences in temporal orientation. In J. McGrath (Ed.) *The social psychology of time: New perspectives.* Beverly Hills, CA: Sage Publications.

Jones, J.M., Banicky, L., Pomare, M. & Lasane, T.P. (1999). *A temporal orientation scale: Focusing attention on the past, present, and future.* Manuscript submitted for publication.

Lasane, T.P. (1995, March). *Temporal orientation as a mediator of college students' decision-making.* Poster presented at the annual meeting of the Eastern Psychological Association, Boston.

Lasane, T.P. & Jones, J.M. (1999*).* Temporal orientation and academic goal-setting: The mediating properties of a motivational self. *Journal of Social Behavior and Personality. 14(1)*, 31-44.

Lasane, T.P. & Jones, J.M. (in press*).* Temporal orientation and college students' decision-making: When socially induced temporal myopia interferes with academic goal-setting. *Journal of Social Behavior and Personality.*

Lasane, T.P., Loebe, B.A., & Dinsenbacher, S.E. (1999). *Assessing the phenomenological experience of self-regulated academic goal-setting: The Behavioral Preferences Checklist.* Manuscript in preparation, St. Mary's College of Maryland.

Levine, R.V., West, L., & Reis, H. (1980). Perceptions of time and punctuality in the United States and Brazil. *Journal of Personality and Social Psychology, 28(2)*, 179-183

Linville, P.W. (1985). Self-complexity and affective extremity: Don't put all of your eggs in one cognitive basket. *Social Cognition, 3,* 94-120.

Raynor J.O. & Entin, E.E. (1982). Theory and research on future time orientation and achievement motivation. In J.O. Raynor and E.E. Entin (Eds.*) Motivation, Career Striving, and Aging.* Washington, DC: Hemisphere.

Schunk, D. H. (1991). Self-efficacy and academic motivation. *Educational Psychologist, 26,* 207-231.

Steele, C.M. (1988). The psychology of self-affirmation: Sustaining the integrity of the self. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol.21, 261-302). New York: Academic Press.

Stock, J. & Cervone, D. (1990). Proximal goal-setting and self-regulatory processes. *Cognitive Therapy and Research, 14(5),* 483-498.

Strathman, A., Boninger, D. Gleicher, F., & Baker, S. (1994) Construction the future with present behavior: An individual differences approach. In Zaleski, Z. (Ed.) *Psychology of future orientation.* Lublin, Poland: Towarzystwo Naukowe KUL.

Thomae, H. (1981). Future time perspective and the problem of cognition/motivation interaction. In G. d'Ydewalle & W. Lens (Eds) *Cognition in human motivation and learning* (pp. 261-274). Hillsdale, NJ: Erlbaum.

Tobacyk, J. & Nagot, E. (1994). Cognitive dimensions used in the prediction of future events: Assessment instrument and indications for cognitive functioning. In Zaleski, Z. (Ed.) *Psychology of future orientation.* Lublin, Poland: Towarzystwo Naukowe KUL.

Trommsdorff, G. (1983). Future orientation and socialization. *International Journal of Psychology, 18,* 381-406.

Van Calster, K., Lens, W., & Nuttin, J. (1987). Affective attitude toward the personal future: Impact of motivation in high school boys. *American Journal of Psychology, 100,* 1-13.

Wood, R. & Bandura, A. (1989). Impact of conceptions of ability on self-regulatory mechanisms and complex decision-making. *Journal of Personality and Social Psychology, 56,* 407-415.

Zimmerman, B.J., Bandura, A., & Martinez-Pons, M. (1992). Self-motivation for academic attainment: The role of self-efficacy beliefs and personal goal-setting. *American Education Research Journal, 29(3),* 663-676.

[1] Past orientation has not been reliably related to academic achievement outcomes and is often identified with clinically depressed populations; thus, we will not include past time oriented subjects in our discussion here.

Authors' Note: This research project was supported by a Faculty Development Grant issued to the first author by the Office of the Provost at St. Mary's College of Maryland, St. Mary's City, MD 20686. Portions of this research were presented at the 1998 meeting of the Eastern Psychological Association in Boston, MA. The authors gratefully acknowledge the contributions of Dr. Michael B. Casey, Dr. Geoffrey Munro and Dr. Richard D. Platt who reviewed earlier versions of this manuscript.

Evaluation of an Abstinence-Based Curriculum for Early Adolescents: First Year Changes in Sex Attitudes, Knowledge and Behavior

Eva S. Goldfarb
Joseph Donnelly
Montclair State University
David F. Duncan
Brown University
Michael Young
University of Arkansas
Carolyn Eadie
Danielle Castiglia
Montclair State University

Project C.A.R.E. is intended to achieve a reduction in the incidence of early adolescent sexual intercourse, and therefore of early adolescent pregnancy through a three-year intervention using an abstinence-based sexuality education curriculum. The intervention group for this study was lower socio-economic urban public school students, grades six through eight, in northeastern New Jersey. Changes during the first year of the program were examined. Significant differences between the intervention and control groups were found which, although small, can be attributed to change in the intervention group. In terms of behavioral outcome, intervention participants reported a significantly lower incidence of sexual intercourse than did the control group and were less likely to believe that they would have sexual intercourse before finishing high school. Future expectations for becoming pregnant/getting someone pregnant as a teenager showed little or no effects from the intervention. There are significant but small differences in the areas of self-esteem and sexuality related attitudes but not in the areas of perceived social support, communication or perceived peer influence. These findings are, in part, due to the fact that at pre-test, scores were already strongly in the desired direction. Results are encouraging from the first year of the intervention. Likely reasons for the results and expectations for second and third year findings are discussed.

Every year approximately one million girls in the United States become pregnant, the vast majority of teen pregnancies (78%) being

---

Author info: Correspondence should be sent to: Joseph Donnelly, Psych. Dept., Montclair State University, Montclair, NJ 07043

North American Journal of Psychology, 1999, Vol. 1, No. 2, 243-254
© NAJP

unintended, and more than half a million teenagers have a child (Haffner, 1995; Henshaw, 1998). American rates of teen pregnancy continue to be greater than those of other industrialized nations, and within America, adolescents who are poor or black are more likely to become pregnant than their more advantaged and white counterparts (Guttmacher Institute, 1994). Compared to females who wait until age 20 to give birth, teenage mothers tend to experience poorer health outcomes, lower levels of school completion, larger families, greater likelihood of being a single parent, and increased risk of welfare dependency (Brown & Eisenberg, 1995; Morris, Warren, & Aral, 1993). American teenagers acquire a sexually transmitted disease (STD) at the rate of three million annually, placing their ability to have children or to avoid serious health problems such as cancer and infection with HIV in peril (Guttmacher Institute, 1994).

During the past several decades health educators have explored a variety of approaches to reducing the rate of adolescent pregnancy, ranging from education in sexual biology to affective education and sexual values clarification, along with such innovations as school-based clinics or programs that link sexuality education with job training. Unfortunately, comprehensive reviews of adolescent pregnancy prevention programs continue to find few programs that have been well evaluated and found to be successful in reducing teen pregnancy (Kirby, 1997; Moore, Brent, Miller, & Morrison, 1995).

A comprehensive review of twenty-three studies found that effective programs share the following characteristics:

> A narrow focus on reducing sexual risk-taking behaviors that may lead to HIV/STD infection or unintended pregnancy. Social learning theories as a foundation for program development, focusing on recognizing social influences, changing individual values, changing group norms, and building social skills. Experimental activities designed to personalize basic, accurate information about the risks of unprotected intercourse and methods of avoiding unprotected intercourse. Activities that address social or media influences on sexual behaviors. Reinforcing clear and appropriate values to strengthen individual values and group norms against unprotected sex. Modeling and practice in communication, negotiation, and refusal skills (Kirby, et al., 1994).

Project C.A.R.E. (Creating Awareness Through Relationship Education) is a community test of the effectiveness of an abstinence-based education program, the focus of which is to delay the initiation of sexual activity among young adolescents. The intervention being tested consists of the *Sex Can Wait* upper elementary (Young & Young, 1997a) and middle school curricula (Core-Gebhart, Hart, & Young, 1997), and the *Abstinence: Pick and Choose Activities* book (Young & Young, 1997b) implemented respectively in grades six, seven and eight. This intervention clearly promotes sexual abstinence while providing factual information regarding sexual behavior, adolescent pregnancy, child rearing and their consequences. In addition, the curricula emphasize skills for goal setting, decision making, effective communication, and self-esteem enhancement. (Core-Gebhart, Hart, & Young, 1997). Unlike many abstinence-only curricula that use fear and moral preaching to get their message across, and which have not produced any well-done evaluation studies demonstrating any behavioral change, *Sex Can Wait* portrays sexuality as a healthy, normal and very positive aspect of human life. Within this context, it promotes abstinence from sexual intercourse as the best choice young adolescents can make to maintain their physical, psychological and social health.

The potential importance of this curriculum is indicated by the facts that the sexuality/abstinence education project from which these materials originated is a five-time winner of the U.S. Dept. of Health & Human Services Award for Outstanding Work in Community Health Promotion. The materials are also featured in the American College of Obstetricians and Gynecologist's recent publication *Strategies for Adolescent Pregnancy Prevention* (1997).

Research articles indicating positive benefits of the curricula on student outcomes have been published in national professional journals (Denny, Young, & Spear, 1999; Spear, Young, & Denny, 1997;Young, Core-Gebhart, & Marx, 1992) These studies, however, were limited to schools from a rural southern state and involved mostly Caucasian participants. Also, none of these studies looked at the impact of the program over an extended period of time, or measured long-term outcomes. The *Abstinence Pick and Choose Activities* book has not yet been evaluated formally.

METHOD

The Curricula

The *Sex Can Wait* curriculum series has three components: upper elementary, middle school, and high school. In this study, only the upper elementary and middle school components are being implemented in grades six, and seven respectively, and the related program, *Abstinence Pick and Choose Activities*, is being implemented in the eighth grade. The curricula are driven by the principles of social learning theory, including emphasis on susceptibility, self-efficacy, social support, peer norms, and skill building. There are three main divisions in the curriculum. Part A, entitled “Knowing Myself,” addresses self-esteem, reproductive anatomy and physiology, changes associated with puberty and decision-making skills. Part B is called "Relating to Others," and helps participants to develop effective communication skills. Part C, "Planning My Future," explores goal setting and life planning. The program is a five-week, abstinence-based sexuality education program. The upper elementary level has twenty-three lessons, while the middle school level has twenty-four. The eighth grade program, *Abstinence Pick and Choose Activities*, consists of 45 stand-alone activities covering the same domains as those covered in *Sex Can Wait* We selected 23 of these activities for the treatment schools to implement that use the same concepts as those in covered in the earlier grades.

One of the strengths of *Sex Can Wait* is its extremely user-friendly format. Each lesson includes a lesson overview, behavioral objectives, a time estimate, and teacher direction as to the preparation and material needed. Each activity (most lessons have more than one activity) includes actual words teachers could use to introduce the topic, specific procedures for conducting the activity, and words for use in closing the activity. Handouts and transparency masters are also included. The curriculum includes a number of parent-child homework assignments, guidelines for teacher implementations, and information for parents regarding communication with their children about sex and sexuality.

Project Design

As part of project C.A.R.E., intervention group teachers participated in a three-day intensive training workshop. There they were provided training in the teaching of sexuality education and specifically in the implementation of *Sex Can Wait* and *Abstinence Pick and Choose Activities* in sixth, seventh, and eighth grades. They were also provided training in the administration of the evaluation instrument. Teachers then pre-test students with the evaluation instrument designed to measure sexuality-related attitudes, behaviors, behavioral intentions, and knowledge.[1] Students then received the twenty-three or twenty-four-session curriculum and completed a post-test immediately following the intervention.

Teachers in control/comparison schools received a one-day workshop in the administration of the evaluation instrument and then administered a pre-test to their students before beginning whatever health education curricula were already in place. Teachers administered a post-test upon completion of their curricula.

Six schools were involved in the first year of the project, the data for which are presented here. Schools were selected in matched pairs as controls and treatment schools. Within each school district, there were pairs of demographically similar control and treatment schools. All schools had been identified as serving urban, high minority, lower socioeconomic status communities in northern New Jersey.

Evaluation Design

This evaluation data presented represents changes over the first year of Project C.A.R.E. in attitudes and knowledge regarding sex, in self-reported sexual behavior and in future expectations regarding sexual activity. It is based on a classic pre-post control group design. The curricula were implemented in classes at three intervention schools. The three control schools continued to offer their usual health curricula, which did not include *Sex Can Wait* or *Abstinence Pick and Choose Activities*. Students in sixth, seventh, and eighth grades at each school completed, subject to parental consent,[2] a pre-test survey immediately before beginning the curriculum and the identical post-test immediately following the intervention (time lapse approximately 8-12 weeks). Students were also given a post-post test survey the following school year. All surveys remained anonymous.

Evaluation Instrument

The evaluation instrument is a 47-item questionnaire. Five questions assess demographic information, nine relate to self-esteem, fifteen to

TABLE 1 Sample Items

Self-Esteem
No one pays much attention to me at home.
Choices: I strongly agree, I somewhat agree, I somewhat disagree, I strongly disagree.
Attitudes
Having sexual intercourse is just a normal part of teenage dating (going out).
Choices: I strongly agree, I somewhat agree, I somewhat disagree, I strongly disagree.
Behaviors
Have you ever had sexual intercourse (a male's penis going into a female's vagina)? Choices: Yes, No

Behavioral Intentions
What are the chances that you will have sexual intercourse during the next year?
Choices: I definitely will, I probably will, I probably will not, I definitely will not.

---

attitudes regarding sexuality, four to sexuality knowledge, nine to behaviors, and five to behavioral intentions. Self-Esteem and some attitude questions were assessed via a four-point Likert type scale (See Table 1). Other attitude questions were true false. Behaviors and behavioral intentions were assessed using Likert-type scales or yes-no responses. (See Table 1). Items for this evaluation came from Kirby's national evaluation of sexuality education programs (1985) and from the original evaluation project for *Sex Can Wait* (Denny, Young, Spear, 1995).

Analysis

Data analysis was conducted using the Statistical Package for the Social Sciences and was nonparametric in nature, involving no *a priori* assumptions about the underlying distributional characteristics of the data.

Analysis included pre- and post-test comparisons for the total subject population and for the intervention and control groups separately, post-test only comparisons between the intervention and control groups, and change score (D score) comparisons between the two groups.

RESULTS

Post-test survey results from 839 students were examined, with 426 students (227 females and 199 males) from intervention schools and 413 students (211 females and 202 males) from control schools. While pre-test comparisons had shown the intervention and control groups to be comparable, this was not true for all variables for the students completing the post-test. At post-test, there was a small but significant difference in the age distribution of the two groups, such that fewer of the control subjects fell within the oldest age group and highest grade in school. Given that likelihood of sexual activity increases with age among adolescents, this creates a small bias against finding a positive impact of the intervention on sexual behavior.

Except for an extremely small but significant difference at post-test between the two groups – the majority (53.7%) of the intervention students live in a house while the majority (52.6%) of the control students live in an apartment - there were no other significant differences between the groups in terms of demographics or living arrangements. The two groups did not differ significantly in either their frequency of attendance at religious services or their self-assessed degree of religiousness.

Intermediate Outcomes

While the ultimate goal for this program is reducing risky sexual behaviors, *Sex Can Wait* was designed as well to address intermediate outcomes considered to be important indicators of behavioral change. These include self-esteem, perceived social support, communication about sexuality, attitudes and knowledge.

Self-Esteem. Improved self-esteem was one of the objectives of the curriculum and was measured by a number of items on the survey. No differences between the groups were found on the students' responses to the following statements: "I think that I have good personal qualities," "I am comfortable making my own decisions," and "I know what to do in order to reach my life's goals." Nearly 90% of the students had endorsed each of these items at pre-test, leaving little room for improvement. The change from pre-test to post-test was, in fact, less than 1% on each item.

Small but significant ($p < .02$) differences between the two groups were, however, found on three self-esteem items. Students exposed to the curriculum were more likely than control students to agree or strongly agree that, "I value respect for myself and others," and that "I can see myself graduating from high school." On the other hand, control students were more likely to agree or strongly agree that, "I feel good about myself on a regular basis." In each case more than 80% of both groups agreed with the item and the difference was between 3.5 and 6.9% in the proportion agreeing.

Perceived Social Support/Peer Influence. No group differences were found on items intended to measure social support derived from family and friends. Again this was largely due to the fact that most students responded favorably on these items at pre-test, thus creating a ceiling effect.

Measures of perceived peer influence to engage in sexual activity showed no group differences. Such statements as "most of my friends have had intercourse," and "my friends think it is okay for people my age to have sexual intercourse," were endorsed by better than one-third of both groups both pre- and post-test.

As far as communication about sexuality with important others, groups did not differ in the frequency with which they reported talking about sex with families, other adults, friends, or their girlfriends or boyfriends about sexuality related issues.

Sexuality Related Attitudes. Roughly 90% of both groups agreed that, "When it comes to my own sexual behavior, I know for sure what is right." A large majority of both groups agreed that, "Sexual abstinence is the best choice for people my age," and strongly disagreed with the statement that, "It's okay for people my age to have children." Post-test responses did not differ significantly from pre-test.

Small but significant ($p < .02$) between-group differences were found on three sex attitude variables. Respondents from the control group were more likely than intervention recipients to endorse the belief that, "It is all right for two people to have sex before marriage if they are in love" (51.9% versus 48.3%). Controls were less likely than intervention recipients to believe that "Having sex can cause lots of problems for people my age" (81% versus 88.7%). Finally, a higher percentage of control group respondents agreed that: "Having intercourse is just a normal part of teenage dating" (35.2% compared to 23.8% of intervention group). The within group pre- to post-test differences and between-group change score differences, however, were non-significant for all these measures of sexuality attitudes.

Sexual Knowledge. Between-group differences in sex knowledge were initially non-significant. The intervention group, however, showed significant increases in the number of correct answers to all four knowledge questions. The control group showed no significant change on these items.

Sexual Behavior

Controls were significantly ($p < .02$) more likely to report having ever had intercourse (23.5% versus 16.5%) and having had intercourse in the past month (25.5% versus 15.4%). Obviously some measurement error is reflected in the higher percentage of controls reporting intercourse in the past month than ever.

Regarding condoms, 13.5% of the controls and 7.7% of the intervention group reported intercourse without a condom in the past month. For those reporting intercourse, 47% of the controls and 50% of the intervention group reported using a condom, which is well within the range of chance variation.

Future Expectations. While more controls than intervention recipients predicted that they would have sex during next year, the difference (26.6% versus 20.8%) was not significant, due to relatively large within-group variance. A significant ($p < .05$) difference was found in expectation of having intercourse before finishing high school, with 54.5% of controls and 46.4% of intervention subjects believing they would. No group difference was found in expectation of getting pregnant or getting someone pregnant while still a teenager, of urging a partner to have intercourse in the next year, or of yielding to such urging.

DISCUSSION

Significant impact on self-report of sexual behavior and expectations is surprising considering the general lack of impact on intermediate objectives. The groups showed few differences attributable to C.A.R.E. in terms of self-esteem, peer relations, or sexual attitudes and none on sexual knowledge. These findings are at least in part due to the apparent fact that the students in general were already far closer to the intermediate goals than was expected. The failure to find significant differences seems to be largely due to ceiling effects in many of the measures.

We are presented with the finding, then, that a population of students who received education directed at educational objectives they had already largely achieved, nevertheless benefited from that education as expected for students who were in need of improved self-esteem, etc. One possibility is that these intermediate variables are in fact important and that with these characteristics already largely in place at baseline, participants were ready to respond to the messages about sexual behavior.

Another possible interptretation of these results is that the theoretical rationale underlying the curriculum is flawed. There has been great debate about the importance of these mediating variables on adolescent's sexual behavior. Studies have found mixed results on the impact of parent-child communication (Aneshensel et al., 1990; Green and Sollie, 1989; Hofferth, 1987;), self-esteem (Orr et al., 1989), perceived social support (Lewis and Lewis, 1984), peer expectations (Smith et al., 1985) and attitudes regarding sexual behavior (Zabin, et al., 1984). The level of association of these factors with adolescent sexual behavior has been found to vary with age, gender, and other factors. Kirby et al. (1994) found that, among other things, effective programs had "a narrow focus on reducing specific sexual risk-taking behaviors." Although *Sex Can Wait* and *Abstinence Pick and Choose Activities* are focused on sexual behaviors, some of the sessions dealing with related variables such as self-esteem, communication and knowledge may not be necessary. Perhaps these serve to dilute the message rather than enhance it. Further, if the program is just as or more successful in reducing sexual behavior with fewer sessions than the current 23, it would be more accessible to a variety of communities.

Conclusions and Recommendations

The results of this evaluation suggest that Project C. A. R. E.'s implementation of the *Sex Can Wait* curriculum and *Abstinence: Pick and Choose Activities* book in urban schools was modestly successful in delaying the onset of sexual intercourse. It seems to have also resulted in a small decrease in the number of students expecting to have sexual intercourse prior to graduation from high school. Other measures of future expectations, however, revealed no significant group differences between students at the intervention and comparison schools. Although the decreases in sexual behavior and behavioral intentions are small, they represent only the first year of a three-year program. The trend represented by these results is encouraging.

The findings of this evaluation suggest that the program is moving in the right direction. Continued evaluation over the second and third years of the program will provide further insight and clarification into some of the issues raised here. In addition, further evaluations of this program that attempt to tease out those components that may be responsible for its success are called for. Further analysis of these results as well as replication in other populations is clearly needed.

REFERENCES

American College of Obstetricians and Gynecologists (1997) *Strategies for adolescent pregnancy prevention*, Washington, D.C.

Aneshensel, C.S., Becerra, R.M., Fielder, E.P., Schuler, R.H., (1990). Onset of fertility-related events during adolescence: a prospective comparison of Mexican American and non-Hispanic white females. *American Journal of Public Health*; *80* (8): 959-963.

Brown S., & Eisenberg, L. (Eds.) (1995). *The best intentions: unintended pregnancy and the well-being of children and families*. Institute of Medicine Report. Washington D.C.: National Academy Press.

Core-Gebhart, P., Hart, S. and Young, M. (1977). *Sex Can Wait - a curriculum for middle school classrooms - OAPP Approved Edition*. Santa Cruz, CA: ETR Associates.

Denny, G., Young, M. and Spear, C. (1999). An evaluation on the Sex Can Wait Abstinence Education Curriculum Series. *American Journal of Health Behavior 23*. 134-143.

Denny, G., Young, M. and Spear, C. (1995). *Sex Can Wait training and evaluation project; Student survey booklet*. Unpublished test instrument.

Green, S.K.,and Sollie, D.L. (1989) Long-term effects of a church-based sex education program on adolescent communication. *Family Relations*; *38*, 152-156.

Guttmacher Institute. (1994). *Sex and America's teenagers*. New York: The Alan Guttmacher Institute.

Haffner, D. (ed.). (1995). *Facing facts: sexual health for America's adolescents*. National Commission on Adolescent Health, Sexuality Information and Education Council of the United States (SIECUS)

Henshaw, S.K. (1998). Unintended pregnancy in the United States. *Family Planning Perspectives*; *30* (1) (Jan/Feb.):26

Hofferth S.L. (1987). Influences on early sexual and fertility behavior. in: Hofferth S.L., Hayes, C., (Eds.). *Risking the Future*. Washington, D.C.: National Academy Press.

Kirby, D. (1997). *No easy answers: research findings on programs to reduce teen pregnancy*. Washington, DC: National Campaign to Prevent Teen Pregnancy.

Kirby, D. (1985). *Sexuality education : an evaluation of programs and their effects*. ETR Associates, Santa Cruz,CA.

Kirby, D., Barth R., Leland, N., et al. (1994). School-based programs to reduce sexual risk behaviors: a review of effectiveness. *Public Health Reports*: *109*: 339-360.

Lewis, C.E., & Lewis M.A. (1984). Peer pressure and risk-taking behaviors in children. *American Journal of Public Health*; *74*: 580-584.

Maternal and Child Health Bureau, U. S. Department of Health and Human Services (1997). Block Grant Application Guidance for The Abstinence Education Provision of the 1996 Welfare Law, Public Law 104-103, New Section 510 of Title V of the Social Security Act. Washington, DC: author.

Moore, K. A., Brent, C., Miler, D. G., and Morrison, D. R. (1995). *Adolescent sex, contraception, and childbearing: a review of recent research*. Washington, DC: Child Trends, Inc.

Morris L, Warren C, Aral S. (1993). Measuring adolescent sexual behaviors and related health outcomes. *Public Health Reports*, *108* (supplement 1), 31-36.

Orr, D.P., Wilbrandt, M.L., Brack, C.J., Rauch, S.P., Ingersoll, G.M. (1989). Reported sexual behaviors and self-esteem among young adolescents. *American Journal of Diseases of Children*; *143*(1): 86-90

Smith, E.A., Udry, J.R., Morris, N.M. (1985) Pubertal development and friends: a biosocial explanation of adolescent sexual behavior. *Journal of Health and Social Behavior*; *26*: 183-192.

Spear, C., Young, M., & Denny, G. (1997) Field testing an abstinence based sexuality education program for upper elementary students. *Journal of Health Education*, *28*:335-40.

Young, M., & Bailey, W. (1998). The Politics of Abstinence Education: From Reagan's Title XX to Welfare Reform's Title V. *International Electronic Journal of Health Education*, *1*(4), 207-212.

Young, M., Core-Gebhart, P., & Marx, D. (1992) Abstinence oriented sexuality education: initial field test results of the Living Smart Curriculum, *Family Life Educator*, *10*: (Summer) 4-8.

Young, M., & Young, T. (1997a). *Sex Can Wait: An Abstinence Based Sexuality Education Program for Upper Elementary Classrooms*. ETR Associates, Santa Cruz.

Young, M., & Young, T. (1997b). *Abstinence pick and choose activity book*. ETR Associates, Santa Cruz.

Zabin, L.S., Hirsch, M.B., Smith, E.A., Hardy, J.B. (1984). Adolescent sexual attitudes and behavior: are they consistent? *Family Planning Perspectives*, *16*: 181-185.

BEST COPY AVAILABLE

[1] In the first round of data collection, project staff collected all evaluation data. It was determined that, in fact, providing training to the classroom teacher in administrating the questionnaire was a better design. With the exception of the initial pre-testing of the first groups then, classroom teachers administered all pre- and post-tests to their own students.

[2] Passive consent was used for this study. Parents who did not want their child(ren) to participate in the study had to return the signed consent form to school. These children were still able to participate in the curriculum but not in the evaluation component. Less than 1% denied their children permission to participate.

End note: This project was made possible through the funding and support of the Department of Health and Human Services Office of Adolescent Pregnancy Programs.

Structure of Multicultural Attitudes Toward Disabilities

Dorothy Scattone
University of Southern Mississippi

Howard B. Lee
California State University, Northridge

This study was conducted to compare the underlying structure of attitudes toward known disabilities across different cultural groups (White, Black, Asian, Mexican, foreign-born Asian and US born Asian). The attitude measure was adopted from Westbrook, et al (1993) to include 19 disabilities. Respondents used a 5-point Likert scale to indicate their level of acceptance. The data were analyzed through the use of exploratory and confirmatory factor analysis. Results showed the existence of a similar factor structure across all ethnic groups.

There have been relatively few studies performed on the attitudinal disposition toward people with disabilities. Westbrook, et al. (1993) have pointed out that research information on attitudes toward mental and physical disabilities have been lacking. Of those that have examined attitudes, most have examined only the attitudes of Caucasians (Jaques, et al., 1970; Zaromatidis, et al., 1999). Even fewer studies have been conducted that have compared the attitudinal differences toward disabilities across different cultures (Groce & Zola, 1993). A recent study by Scattone & Saetermoe (1997) has compared six different cultural groups on their attitudes toward disabilities. This study was noteworthy in that it was conducted using university students in the southern California area. Unlike many geographic regions, southern California consists of a large number of different ethnic and cultural groups.

The minimal amount of research in the area of multicultural attitudes toward disabilities may be due to the lack of adequate measurement tools. Some researchers such as Makas, et al. (1988), Shokoohi-Yekta & Retish, (1991), Chan, et al. (1988) and Westbrook, et al. (1993) have developed instruments and established to some degree the reliability and validity of those instruments. They have also found cultural differences in attitudes toward disabilities in terms of social distances. Shokoohi-

---

Author's info: Correspondence should be sent to: Howard Lee, Dept. of Psychology, California State U., Northridge, Northridge, CA 91330-8255

North American Journal of Psychology, 1999, Vol. 1, No. 2, 255-260.
© NAJP

Yekta & Retish (1991) used an instrument that had five factors and compared the factor scores of Chinese and American students.

None of these studies factor analyzed the attitudinal data within many cultural groups or compared the factors across groups. Different cultures may have different perceptions, but the existence or non-existence of a common universal factor structure has not been determined. The goal of this current study is to provide information that would be helpful when assessing the cultural differences on attitudes toward disabilities and to establish the number of underlying dimensions for attitudes.

METHOD

Participants

Two separate samples of participants were gathered for this study. Both samples consisted of students attending a state university in southern California. The first sample consisted of 320 White, Black, Mexican and Asian Americans. Ninety-two were White-Americans, 59 were Black-Americans, 81 were Asian-Americans and 88 were Mexican-Americans. The second sample consisted entirely of Asians. Sixty-one of them were born in the United States and 191 of them were born in another country. Table 1 gives the mean ages, standard deviations, and the range of ages for the participants. Of the multi-cultural groups, whites were generally older than the other three groups. White and Mexican-Americans had the greatest variability. Eight white participants were aged 40 or older. Five Mexican-American were aged 40 or older. Foreign-born and American-born Asians were similar in age. All participants were recruited through the Asian-American Studies department.

TABLE 1. Mean Ages, Standard deviations and Ranges for each Ethnic Group

Group	Mean	SD	Min.	Max.
Multi-cultural Sample				
White	24.9	7.96	18	54
Black	22.1	3.90	18	35
Asian	20.1	2.66	19	31
Mexican	23.0	7.23	18	61
Total	22.9	6.34		
Asian Sample				
US-born	23.3	8.11	18	56
Foreign-born	25.7	9.25	18	57

Procedure

In both samples, participants were asked to complete a 19-item disability questionnaire. The 19 items were adopted from Westbrook, Legge & Pennay (1993). Each of 19 disabilities was listed and the participant was asked to rate the acceptability of each disability on a 5-point Likert scale. The "5" indicated the highest acceptance and "1" indicated the lowest level of acceptability. The questionnaire also contained items asking for demographic information and the amount of contact and experience with disabled people. A list of the disabilities used in the study is given in Table 2.

TABLE 2. Criterion I Rotated Solution for Each Sample (1^{st} Factor)[1]

	USA	Foreign	White	Black	Mex.	Asian
Amputee	.84	.84	.74	.86	.63	.83
Arthritis	.43	.66	.53	.72	.67	.63
Asthma	.65	.72	.59	.84	.69	.74
Blindness	.83	.82	.80	.90	.77	.84
Cancer	.80	.81	.69	.85	.79	.87
Cerebral Palsy	.90	.89	.82	.92	.86	.86
Deafness	.81	.86	.78	.89	.71	.82
Down's Syndrome	.88	.84	.87	.88	.84	.76
Dwarfism	.82	.87	.83	.88	.79	.85
Epilepsy	.88	.81	.84	.88	.81	.79
Facial Scars	.80	.85	.76	.76	.70	.87
Mental Retardation	.81	.85	.81	.84	.89	.85
Multiple Sclerosis	.84	.89	.83	.91	.82	.85
Old Age	.79	.63	.68	.92	.59	.67
Paraplegia	.86	.90	.85	.79	.84	.90
Psychiatric Illness	.58	.80	.69	.68	.68	.73
Scoliosis	.78	.85	.77	.91	.78	.86
Stuttering	.79	.86	.80	.85	.74	.87
Ulcer	.81	.74	.66	.84	.67	.83

RESULTS AND DISCUSSION

Exploratory Factor Analysis

Within each culture sampled, the 19 items of the attitudes toward disabilities were factor analyzed using Comrey's minimum residual method of extraction and rotated with Criterion I of the Tandem Criteria (Comrey, 1967, Comrey & Ahumada, 1964, Comrey & Lee, 1992). The Comrey minimum residual method of extraction uses only the strength of the off-diagonal correlations of the correlation matrix and does not require the input of unknown communality estimates. For each sample, the number of extracted factors ranged from 4 to 7. Criterion I was used to rotate the extracted factors because it has been shown to be effective in finding the number of factors. Criterion I has also been effective in finding the existence of general factors. Criterion I is based on the principle that if two variables are correlated they should appear on the same factor. Criterion I effectively tries to squeeze as much of the common factor variance into as few factors as possible.

Using the cutoff of ±0.30 to determine a significant factor loading, each sample yielded a similar factor structure. There was one major factor and a much smaller second factor. A few of the disabilities (Asthma, Arthritis and Ulcer) were not pure factor measures since they loaded substantially on two factors. Table 2 shows the factor loadings for the first factor in each group.

Confirmatory Factor Analysis.

Confirmatory factor analyses were done through the program EQS (Bentler, 1989). Two sets of confirmatory factor analyses were done. The first involved fitting a 2-factor simple structure solution to each sample. In every sample the goodness of fit statistic, χ^2, was statistically significant. This indicates a lack of fit between the factor model and the empirical data. However, the χ^2 is affected by sample size. The Comparative Fit Index (CFI) is a better measure in that its value is not dependent upon sample size. The CFI values are given in Table 3. The fit values do not meet the cutoff value of .95. This tells us that improvements can be made to the fitted model. However, the existence of variables that are not pure factor measures makes it impossible to offer a simple interpretation. Table 3 also gives the correlations between the two factors. The correlation between factors ranged from 0.63 to .89. This indicates highly correlated factors. When the impure variables were taken into consideration (non-simple structure) in the factor model, there was only a slight increase in the Comparative Fit Index and the correlations between the factors decreased to .60 or below. Additional analyses where only one general factor was fitted produced a slightly

TABLE 3. Comparative Fit Indices for Each Sample

Cultural Group	CFI	Correlation
White	.78	.63
Black	.70	.82
Mexican	.77	.70
Asian	.81	.84
Foreign-born Asian	.88	.84
US-born Asian	.65	.89

poorer fit. The CFI indices obtained for models with 3, 4 and 5 factors showed no marked improvement over the two-factor model.

In the second set of confirmatory factor analyses, the factor structures of attitudes toward disabilities of all four ethnic groups in the multicultural sample were compared. The Asian group consisted of both US-born and foreign-born participants. Each ethnic group's factor structure was compared to every other ethnic group's structure.

Likewise, for the separately collected Asian sample the factor structure of foreign-born Asians was compared to US-born Asians. Again, the Comparative Fit Index did not reach the ideal fit value but was relatively consistent. The CFI values are given in Table 4.

TABLE 4 Structural Comparison Between Samples

Comparison	CFI
White-Black	.74
White-Mexican	.77
White-Asian	.79
Black-Mexican	.74
Black-Asian	.76
Mexican-Asian	.79
Foreign-born vs. US-born Asian	.84
Total	.77

The results from the factor analyses of the attitudes toward disabilities questionnaire seem to indicate that there is one major factor. Although the different ethnic groups may have a different perception of certain disabilities as evident in the Scattone & Saetermoe (1997) study, their underlying structure of attitudes is similar. That is, there is a tendency to perceive the disabilities as a whole or general factor. There are several specific disabilities (arthritis, asthma, and ulcer) that are not pure factor measures, but they seem to be those that are less visually apparent, less severe as far as the everyday functioning of the individual is concerned, and less life threatening disabilities. The only group that deviated somewhat from the others was the US-born Asians. They had dwarf, mental retardation, paraplegic and psychiatric illness load significantly ($>$ .30) on the second factor. They tend to see these disabilities as more related together than foreign-born Asians. However, the US-born Asians did not differ statistically from foreign-born Asians on the composite score of dwarf, mental retardation and mental illness.

It appears from the results of this study that there is a common factor structure underlying disability attitudes across the different cultural groups. In other words, the groups studied here tended to perceive those disabilities in much the same way. However, the factor structure is not a simple one in that it does not follow simple structure with pure factor measures.

REFERENCES

Bentler, P. M. (1989). *Theory and implementation of EQS a structural equations program.* Los Angeles: BMDP Statistical Software, Inc.

Chan, F., Hedl, J., Parker, H., Lam, C., Chan, T., Yu, B. (1988). Differential attitudes of Chinese high school students toward three major disability groups: a cross-cultural Perspective. *International Journal of Social Psychiatry, 34*, 206-217.

Chan, F., Hua, M., Ju, J.J., Lam, C., Shing (1984). Factorial structure of Chinese scale of attitudes toward disabled persons: a cross-cultural validation. *International Journal of Rehabilitation, 7*, 317-319.

Chan, F., Lam, C., Wong, D., Leung, P., Fang, X. (1988). Counseling Chinese Americans with disabilities. *Journal of Applied Rehabilitation Counseling, 19*, 21-25.

Comrey, A. L. (1967). Tandem criteria for analytic rotation in factor analysis. *Psychometrika, 32*, 143-154.

Comrey, A. I. & Ahumada, A. (1964). An improved procedure and program for minimum residual factor analysis. *Psychological Reports, 15*, 91-96.

Comrey, A. L. & Lee, H. B. (1992). *A first course in factor analysis.* (2nd ed.). Hillsdale, NJ: Erlbaum.

Groce, N., Zola, I. (1993). Multiculturalism, chronic illness, and disability. *Pediatrics, 91*, 1048-1055.

Jaques, M., Linkowski, D., Sieka, F. (1970). Cultural attitudes toward disability: Denmark, Greece, and the U.S. *International Journal of Social Psychiatry, 15*, 54-62.

Scattone, D. & Saetermoe, C. (1997, April). *Asian views of disabilities.* Paper presented at the Annual Meeting of the Western Psychological Association, Seattle, WA.

Shokoohi-Yekta, M., & Retish, P. M. (1991). Attitudes of Chinese and American male students towards mental illness. *The International Journal of Social Psychiatry, 37*, 192-200.

Westbrook, M.T., Legge, V., & Pennay, M. (1993). Attitudes towards disabilities in a multicultural society. *Social Science Medicine, 36*, 615-623.

Zaromatidis, K., Papadaki, A. & Gilde, A. (1999). A cross-cultural comparison of attitudes toward persons with disabilities: Greeks and Greek-Americans. *Psychological Reports, 84*, 1189-1196.

---

[1] Arthritis, Asthma, and to a lesser extent Mental Retardation and Ulcer loaded high on factor two across the six samples. Details are available from the second author.

Measuring Cue Perception: Assessment of Reliability and Validity

Karen A. McIntire
Margaret M. Danforth
H. G. Schneider
Appalachian State University

The reliability and validity of three measures of cue perception were assessed. The measures were the Interpersonal Perception Task-15 (IPT-15), the Japanese and Caucasian Facial Expressions of Emotion (JACFEE), and the Adult Facial Recognition Subtest from the Diagnostic Analysis of Nonverbal Accuracy (DANVA). The goals were to assess internal consistency, intercorrelations between measures, and the relationship to a self-report measure of social skills. Both the JACFEE and the DANVA had high internal consistency and were significantly correlated with each other. The IPT-15 had a low internal consistency, and was not correlated with either the DANVA or JACFEE. Scores on the DANVA and the IPT-15 were significantly correlated with subscale scores of the Social Skills Inventory. Cue perception is a measurable construct that was related to aspects of social competence.

There is growing interest in the notion of social intelligence, but this construct is not easily assessed or measured. One approach has been to assess the ability to accurately perceive, process and interpret nonverbal cues (Nowicki & Duke, 1994). Cue perception is an important component of social competence and forms the foundation for more complicated social judgements, cognitions, and decisions. Measures of cue perception based on the ability to recognize the emotions of others through facial expressions have been associated with both empathy and social skills (Riggio, Tucker, and Coffaro, 1989). For meaningful social interaction to take place, individuals must have the ability to non-verbally convey their messages while simultaneously reading similar cues from others (Fichten, Tagalakis, Judd, Wright, & Amsel, 1992). These abilities are dynamic and are qualitatively different from the abilities involved with processing verbal messages. Individuals who successfully interpret nonverbal cues may be aware that they are using subtle cues, but may not be able to fully explain the process they use to infer the emotion expressed by others (Smith, Archer, & Costanzo, 1991).

Author info: Correspondence should be sent to: H.G. Schneider, Psychology Dept., Appalachian State University, Boone, NC 28608.

North American Journal of Psychology, 1999, Vol. 1, No. 2, 261-266.
© NAJP

Deficits in nonverbal processing have been related to social maladjustment in children. Nowicki and Duke (1992) used the term "dyssemia" to label severe deficits in interpretation of conveyed emotion. For children with emotional handicaps, Elmore (1985) linked the problems they experienced in social interactions to difficulties they had in discriminating and interpreting the nonverbal cues of others. Holder and Kirkpatrick (1991) found that children with learning disabilities are less successful than other children in interpreting facial expressions. With adults, the ability to interpret nonverbal cues has been related to basic aspects of social functioning, including interpersonal sensitivity, self-monitoring and ability to understand social situations (Costanzo & Archer, 1989). Social perceptual deficits are also related to problems with psychological adjustment and interpersonal problems experienced by psychiatric patients (Corrigan, 1997).

Several methods are available for measuring the ability to interpret nonverbal cues. Three of the more widely used instruments are the Interpersonal Perception Task (IPT; Costanzo & Archer, 1989), the Diagnostic Analysis of Nonverbal Accuracy (DANVA; Nowicki & Marshall, 1994), and the Japanese and Caucasian Facial Expressions of Emotion (JACFEE; Matsumoto & Ekman, 1988). These instruments measure the individual's ability to perceive the nonverbal cues of others. The DANVA and JACFEE assess an individual's ability to identify the emotion conveyed by facial expressions, while the IPT requires more complex judgements about relationships based on both verbal and nonverbal information.

The purpose of this study was to broaden understanding of how effectively these instruments assess the construct of cue perception. All three measures (IPT-15, DANVA, and JACFEE) were expected to have acceptable reliability. Since all the measures assess cue perception, significant correlations between the scales were expected. As a component of social competence, the cue perception measures were predicted to be significantly related to scores on the Social Skills Inventory (Riggio, 1989).

METHOD

Participants

One hundred and six participants were recruited from introductory psychology courses. Most of the participants were second semester freshmen who received course credit for their participation. There were 71 females and 35 males; the mean age was 19.5 years.

Materials

Interpersonal Perception Task-15 (IPT-15; Costanzo & Archer, 1993). The IPT-15 is a videotape divided into 15 brief scenes. Each scene includes one or more individuals engaged in an unscripted interpersonal interaction followed by a multiple choice question regarding the nature of the interaction. For example, in one scene, two adults and two children are interacting, and the corresponding question is "Who is the child of the two adults?" Each scene possesses an objective criterion of accuracy because the IPT-15 presents real-life interactions. The IPT-15 measures subjects' skills in perceiving social cues and in processing multiple channels of verbal and nonverbal communication (such as vocal cues, posture, body movement, and facial expression). The IPT-15 test samples five aspects of interpersonal relationships: deception, intimacy, status, kinship, and competition. Costanzo and Archer reported a relatively low level of internal consistency for the IPT-15 (KR-20 = .38) but reasonable test-retest reliability of .73.

Japanese and Caucasian Facial Expressions of Emotion (JACFEE; Matsumoto & Ekman, 1988). The JACFEE contains 28 slides of adult faces depicting seven different emotions: anger, contempt, disgust, fear, happiness, sadness, and surprise. Each slide was presented for 10 seconds, after which subjects were asked to select from a multiple-choice list the emotion that most closely matched the facial expression. The authors conducted binomial tests as a measure of reliability for subjects selecting the correct response. They were reported to be significant.

Diagnostic Analysis of Nonverbal Accuracy-Adult Faces 2 (DANVA; Nowicki & Marshall, 1994). The DANVA has 24 slides of adult faces depicting four different emotions: happiness, sadness, anger, and fear. Each slide was presented for 10 seconds, after which participants were asked to select from a multiple-choice list the emotion that most closely matched the facial expression depicted. Nowicki and Carton (1993) reported a coefficient alpha of .77 for college students on the DANVA.

Social Skills Inventory (SSI; Riggio, 1989). The SSI is a 90-item self-report questionnaire with six subscales, each measuring a unique dimension of basic social skills: emotional expressivity (EE), emotional sensitivity (ES), emotional control (EC), social expressivity (SE), social sensitivity (SS), and social control (SC). Reported reliability estimates for the individual subscales ranged from .81 to .96 for test-retest reliability and .62 to .87 for alpha.

Procedure

The IPT-15, JACFEE, DANVA, and SSI were administered in four separate sessions to groups of participants. They were informed that the purpose of the investigation was to explore the characteristics of and relationships between the measures of social perception. Each participant signed a consent form and was provided with a description of the research project when testing was complete. The three measures of cue perception (IPT-15, JACFEE, DANVA) were presented in random order across the four sessions (ABC, BAC, CAB & BCA). The participants completed the cue perception measures and then completed the SSI.

RESULTS

The analysis involved three steps where the scores from the sample were compared to available norms, internal consistency estimates were calculated, and the scores from the IPT-15, JACFEE, and DANVA were correlated with the scores from the SSI. Means and standard deviations for the three instruments were as follows: IPT-15, M = 9.69, SD = 1.71; JACFEE, M = 14.34, SD = 7.71; DANVA, M = 14.98, SD = 5.74. These scores were within the normal ranges reported for each instrument. The JACFEE and DANVA were found to have good internal consistency, with coefficient alpha levels of .94 and .90, respectively. Because of the heterogeneous content of the IPT-15, coefficient alpha was only .09. Scores on the DANVA and the JACFEE were found to be significantly correlated (r = .85, p < .01), but the correlations between the IPT-15 and the DANVA (r = .11) and the JACFEE (r = .08) were not significant.

TABLE 1 Correlations Between Cue Perception and Social Skills Measures

	IPT-15	JACFEE	DANVA
EE	-.17	-.05	-.19
ES	.22	.00	-.07
EC	.08	.17	.24*
SE	.27*	-.02	-.01
SS	.02	.00	.16
SC	.24*	-.01	-.02

Note: Abbreviations: IPT-15, Interpersonal Perception Task-15; JACFEE, Japanese and Caucasian Facial Expressions of Emotion; DANVA, Diagnostic Analysis of Nonverbal Accuracy – Adult Faces 2; EE, Emotional Expressivity; Emotional Sensitivity; Emotional Control; SE, Social Expressivity; SS, Social Sensitivity; Social Control. EE, ES, EC, SE, SS, and SC are the six subscales of the Social Skills Inventory.

*p < .05

The DANVA was found to correlate significantly with the EC subscale of the SSI (r = .24, p < .05). This subscale measures the ability to control emotional and nonverbal expression and the ability to communicate specific emotions. Scores on IPT-15 were significantly correlated with the SC subscale ($r = .24, p < .05$) and the SE subscale ($r = .27, p < .05$). SC and SE scales assess the ability to engage others in interaction, to self-monitor one's impact on others, and adapt based on the interaction. All of the correlations appear in Table 1.

DISCUSSION

The JACFEE and the DANVA demonstrated good internal consistency. Both instruments are widely used in research and were found to be reliable in the validation studies by their authors. The IPT-15 had low internal consistency, but this may be expected since it measures five different facets of nonverbal cue perception. The IPT-15 is a shortened version of the original test and uses a multiple-choice format. Both test length and multiple-choice response format can reduce reliability (Sattler, 1992). Costanzo and Archer (1993), authors of the IPT-15, have reported a test-retest coefficient suggesting reasonable time stability.

The high correlation between the JACFEE and the DANVA would be expected based on similarity in methodology. Both the measures use 10-second exposures of facial photographs posed to depict basic emotions and a multiple choice response format. The IPT-15, on the other hand, was not correlated with either of the other cue perception measures. The IPT-15 vignettes have verbal and nonverbal content, involve spontaneous interactions, and contain contextual cues. The IPT-15 requires participants to make judgments based on expressive behavior, but these judgements are more complex and involve evaluation of multiple dimensions. This task is clearly more complicated than the other two measures but was found to relate to subjects' reports of their social skills.

Based on the relationship between nonverbal cue perception and social skills found in previous studies, it was anticipated that scores on all three cue perception instruments would be significantly related to subscales scores on of the SSI. In fact, only the DANVA and the IPT-15 were found to correlate significantly with any of the subscales of the SSI. These correlations, although significant, were not particularly strong, indicating that only some aspects of social competence were related to cue perception. The cue perception instruments used in the present study measure an individual's actual skill in processing nonverbal information, whereas the social skills measure relies upon the subject's evaluation of his or her own abilities. An individual's self-report of skill in social interactions might be quite different from his or her actual ability. Alternatively, the ability to perceive and process the nonverbal cues of others may be related to only some specific components of social skills. Social functioning is mediated by diverse capacities but these very simple cue perception skills are critical for making more complex judgements and inferences. The DANVA and IPT-15 appear to be slightly more valid than the JACFEE, using SSI scores as the criterion, but future research might be aimed at comparing these measures to other criteria.

REFERENCES

Corrigan, P. W. (1997). The social perceptual deficits of schizophrenia. *Psychiatry:-Interpersonal and Biological Processes, 60* (4), 309-326.

Costanzo, M. (1992). Training students to decode verbal and nonverbal cues: Effects on confidence and performance. *Journal of Educational Psychology, 84,* 308-313.

Costanzo, M., & Archer, D. (1989). Interpreting the expressive behavior of others : The Interpersonal Perception Task. *Journal of Nonverbal Behavior, 13,* 225-245.

Costanzo, M, & Archer, D. (1993). The Interpersonal Perception Task-15 (IPT-15): A guide for teachers and researchers. Berkley, CA: University of California.

Elmore, C. B. (1985). Emotionally handicapped comprehension of nonverbal communication. *Journal of Holistic Medicine, 7,* 194-201.

Fichten, C. S., Tagalakis, V., Judd, D., Wright, J., & Amsel, R. (1992). Verbal and nonverbal communication cues in daily conversation and dating. *The Journal of Social Psychology, 132,* 751-769.

Holder, H. B., & Kirkpatrick, S. W. (1991). Interpretation of emotion from facial expressions in children with and without learning disabilities. *Journal of Learning Disabilities, 24,* 170-177.

Matsumoto, D. & Ekman, P. (1988*). Japanese and Caucasian Facial Expressions of Emotion (JACFEE) AND Neutral Faces (JACNeuF).* [Slides]. San Francisco, CA: Department of Psychology, San Francisco University.

Mazurski, E. J., & Bond, N. W. (1993). A new series of slides depicting facial expressions of affect: A comparision with the Pictures of Facial Affect Series. *Australian Journal of Psychology, 45,* 41-47.

Nowicki, S. Jr., & Carton, J. (1993). The measurement of emotional intensity from facial expressions. *Journal of Social Psychology, 133,* 749-750.

Nowicki, S. Jr., & Duke, M. P. (1994). Individual differences in the nonverbal communication of affect: The Diagnostic Analysis of Nonverbal Accuracy Scale. *Journal of Nonverbal Behavior, 18,* 9-35.

Riggio, R. E. (1989) *Manual for the Social Skills Inventory.* Palo Alto, CA: Consulting Psychologists Press.

Riggio, R. E., Tucker, J., & Coffaro, D. (1989). Social skills and empathy. *Personality and Individual Differences, 10,* 93-99.

Sattler, J. M. (1991). *Assessment of children* (3rd ed.). San Diego: Jerome M. Sattler, Publisher, Inc.

Smith, H. J., Archer, D., & Costanzo, M. (1991). "Just a hunch": Accuracy and awareness in person perception. *Journal of Nonverbal Behavior, 15,* 3-18.

Shyness and Group Brainstorming: Effects on Productivity and Perceptions of Performance

Scott D. Bradshaw
Elizabeth City State University

Mark F. Stasson
Virginia Commonwealth University

Donna Alexander
John Tyler Community College

Research has begun to examine how shyness affects individuals' behavior within task-oriented groups. The current study builds upon this research by examining the effects of shyness on individual and group productivity and on participants' perception of their performance and their group's performance within both interacting and nominal brainstorming groups. Three-person groups brainstormed a solution to a given problem as either an interacting group or as a nominal group where participants worked separately with an understanding that their individual ideas would be combined with those of the other group members. Shy persons, regardless of whether they worked in an interacting or nominal group, generated significantly fewer ideas, reported less satisfaction with their performance and their group's performance, and reported more evaluation apprehension than did not-shy persons.

Since Zimbardo (1977) reawakened interest in the topic, shyness, defined as a person's tendency to experience feelings of anxiety and inhibit their behavior in social situations, has been the subject of a tremendous amount of research (Cheek & Melchior, 1990). Within dyadic interactions, shy persons have been found to interact minimally, evaluate their performance negatively, and tend to be evaluated negatively by their interaction partners (Cheek & Buss, 1981; Garcia, Stinson, Ickes, Bissonnette, & Briggs, 1991; Leary, Knight, & Johnson, 1987).

Also, shy persons tend to evaluate the same feedback from others more negatively than not-shy persons (Pozo, Carver, Wellens, & Scheier, 1991), evaluate their own social abilities negatively (Cheek & Buss,

---

Authors' info: Correspondence should be sent to: Scott Bradshaw, Education & Psychology, Elizabeth City State U., Elizabeth City, NC 27909.

North American Journal of Psychology, 1999, Vol. 1, No. 2, 267-276.
©NAJP

1981; DePaulo, Kenny, Hoover, Webb, & Oliver, 1987), and tend to view social interactions as inherently evaluative (Goldfried, Padawar, & Robbins, 1984). Other research has found that shy persons experience more depression and loneliness, and report lower self-esteem (Gough & Thorne, 1986). They also report less available social support and fewer friends; although, the friendships they do have tend to be of longer duration (Jones & Carpenter, 1986).

Shyness has also been shown to have effects across the life-span. Caspi, Elder, and Bem (1988) found that shy men tended to start careers later, marry later, and, for shy men who started their careers later, to experience more marital instability. Shy women were more likely to follow stereotypical life-roles of wife, mother, and homemaker. Surprisingly, little research has examined the effects of participants' shyness on the functioning of small, task-oriented groups.

The current study addresses this issue and focuses specifically on the effects of shyness on group brainstorming performance.

Zimbardo and Linsenmeier (1983) conducted one of the few studies to examine the effects of shyness in problem-solving groups. They found that shy persons, relative to not-shy persons, talked significantly less, expressed fewer emotions, offered fewer solutions, and, when they did offer solutions, did so less assertively. They also found groups composed entirely of not-shy members made better decisions than groups composed of shy members.

Bradshaw and Stasson (1998) examined attributions for group performance by shy and not-shy persons. When given performance feedback, not-shy participants made group-serving attributions by attributing the cause of failure to the situation and the cause of success equally between themselves and the other group members. In contrast, shy participants minimized their responsibility for both group success and failure, attributed the cause of success equally between the other group members and the situation, and attributed the cause of failure to the other group members. These findings suggest shy group members are isolated from the rest of the group both in terms of their behavior and their perception of themselves as group members. This isolation can, in some instances, adversely affect group performance. How does shyness affect brainstorming performance?

Brainstorming is a popular technique used in approaching group problem-solving. In brainstorming, group members are encouraged to generate as many ideas as they can without stopping to evaluate the ideas that come mind. Members are encouraged to build upon the ideas generated by others in the group and are encouraged to generate wild or outrageous ideas (Osborn, 1957). Despite the prevalence of group brainstorming and many people's belief that it is an effective method of problem solving, most research has shown that simply instructing a group of people to brainstorm is less effective than brainstorming individually with effectiveness defined as quantity of ideas (e.g. see Mullen, Johnson, & Salas, 1991). A group of several people will typically generate more non-overlapping ideas when brainstorming alone as part of a nominal group than when brainstorming as part of an interacting group. However, if brainstorming groups are led by a trained facilitator, then their performance often matches or, in some cases, exceeds the performance of nominal groups (Offner, Kramer, & Winter, 1996; Oxley, Dzindolet, & Paulus, 1996). Similarly, interacting groups given a performance goal equal to the typical performance of nominal groups will match the performance of nominal groups (Paulus & Dzindolet, 1993).

Camacho and Paulus (1995) conducted the only study examining shyness and brainstorming by forming four-person brainstorming groups composed of all not-shy persons, all shy persons, and mixed groups with two persons of each type. They found that shy persons experienced more nervousness and anxiety while interacting in the group, and, as a result, groups with all shy members generated significantly fewer ideas than groups with all not-shy members. Additionally, the not-shy persons in the mixed groups reduced their performance to match the performance of the shy persons, resulting in the mixed brainstorming groups generating significantly fewer ideas than the not-shy groups.

The current study builds upon this previous research by examining the effects of shyness on individual and group productivity and on participants' perception of their performance and their group within both interacting and nominal brainstorming groups. The effects of shyness on brainstorming and performance in nominal groups is especially important given that a common suggestion to improve brainstorming performance is to utilize nominal groups for idea generation. This research was part of a larger study focused on the effectiveness of group and individual idea generation and decision making. Only the portion of the study that pertains to shyness will be discussed here.

METHOD

Participants

Participants were 79 women and 20 men between 17 and 48 years of age with a mean age of 20.61 years. They were recruited from introductory psychology courses at Virginia Commonwealth University and received experimental credits in exchange for their participation.

Procedure

Participants were recruited for a study examining how people solve problems in groups. Data were collected in groups of three by two experimenters who were masked as to the specific hypotheses of the study.

The experimenters explained to the groups that they would first brainstorm ideas for a given problem and then would select the three best ideas their group had generated. After obtaining informed consent, participants were randomly assigned to one of two brainstorming conditions: an Interacting Group, where participants worked face-to-face, stated their idea out loud to the other group members, and wrote down their own idea; or a Nominal Group, where participants worked separately with an understanding that their individual ideas would be combined with those of the other group members. The flow of the Interacting Groups is hindered by having them record their own ideas, but this was done so as to match the experience of the Nominal Groups.

Prior to distributing the problem, the experimenters explained the rules of brainstorming with particular emphasis placed on the importance of quantity of ideas and the avoidance of evaluation of the ideas generated. Participants were then asked to imagine that scientists have discovered a planet that is very similar to earth except that this new planet is completely uninhabited. The groups were then given 10 minutes to generate answers to the question: "If you were chosen to be the first person to live on this new planet during a five year period, what sorts of things (objects) would you take with you to this new planet?"

After generating ideas for 10 minutes, the participants were randomly assigned into one of two decision-making conditions and were asked to select the three best ideas their group had produced. Written copies of each group member's ideas were distributed to each group member.

In the Interacting Group Decision Making Condition participants worked face-to-face to select the three best ideas. In the Nominal Group Decision Making Condition participants worked independently with the knowledge that their decisions would be combined with the decisions of the other group members.

After making their decisions, all participants individually completed a questionnaire. The questionnaire contained seven items that assessed participates' perceptions of their own performance in the group (e.g. On the whole, I am satisfied with my performance in the group.), six items that assessed their perception of the group's performance (e.g. How satisfied were you with the way you and your group worked on solving this problem?), and five items assessing evaluation apprehension (e.g. I sometimes kept ideas to myself because I thought that others might not agree that they were good ones.). In addition, participants also completed Leary's (1983) Interaction Anxiousness Scale as a measure of shyness. The scale consisted of 15 items, such as "I often feel nervous, even in casual get-togethers" and "In general, I am a shy person", that the participants responded to using a five-point Likert-type scale.

After completing the questionnaire, participants were then debriefed and thanked for their participation.

RESULTS

A median split was used to categorize participants as shy or not-shy. Data were analyzed, unless otherwise noted, using a 2 (Nominal or Interacting Group Brainstorming Condition) X 2 (Nominal or Interacting Group Decision Making Condition) X 2 (Shyness) analysis of variance. Only shyness-relevant effects will be discussed here.

Productivity

Analysis revealed that shy persons, regardless of Group Brainstorming Condition, generated significantly fewer ideas, M = 25.79, than not-shy persons, M = 33.38; *F* (1, 91) =4.10, $p < .05$. Did this affect the productivity of the groups themselves? This question was addressed *post hoc* by comparing groups with no shy members with those with one or more shy members.

A 2 (Brainstorming condition) X 2 (Shyness level of the group) analysis of variance revealed no significant effects related to the shyness level of the group. While not significant, the means were consistent with Camacho and Paulus (1995) with fewer ideas generated by the groups with at least one shy member, M = 68.61, than the groups with no shy members, M = 75.70.

Perceptions of Individual and Group Performance

The questionnaire items were combined into three different scales for analysis. All three scales evidenced good internal consistency: Satisfaction with own performance (alpha = .80), Satisfaction with the group's performance (alpha = .82), and Evaluation apprehension (alpha =.84).

Shy persons reported significantly less satisfaction with their own performance, M = 5.57, than did not-shy persons, M = 6.03, *F* (1,91) = 10.66, $p < .01$. Shyness also affected satisfaction with the group's performance, *F* (1,91) = 4.09, $p < .05$, with shy persons reporting significantly less satisfaction, M = 5.45, than not-shy persons, M = 5.60. Consistent with Camacho and Paulus (1995), shy persons also reported significantly more evaluation apprehension, M = 2.29, than did not-shy persons, M = 1.69, $F(1,91) = 15.64$, $p < .001$. The effects of shyness did not interact with either the Brainstorming or Decision Making condition.

DISCUSSION

Shy persons, regardless of whether they worked in an interacting or nominal group, generated significantly fewer ideas, reported less satisfaction with their performance and their group's performance, and reported more evaluation apprehension than did not-shy persons.

While the mean number of ideas generated by groups with shy members was less than the number generated by groups without shy members, this difference was not significant. These findings are consistent with previous research which has found that shy participants in task-oriented groups offer less input and experience higher levels of anxiety during group activities.

This study extends to nominal brainstorming groups the finding of Camacho and Paulus (1995) that shy persons in interacting groups generate significantly fewer ideas. The study did not replicate the finding that groups composed of shy members generate significantly fewer ideas than groups composed of not-shy members. However, in the current study we were not able to compare groups composed entirely of shy and not-shy members because the shyness composition of the groups was not manipulated. Given the reduced level of individual performance, it seems likely that there would be a difference found if such a comparison were possible.

Previous research on brainstorming has found that without attention to specific situational factors, higher productivity is achieved from nominal groups as compared to interacting groups (Mullen et al., 1991). One of the major causes for this reduced level of performance has been found to be production blocking: having to wait one's turn in groups blocks the generation and expression of some ideas (Diehl & Stroebe, 1991). Research on this cause has downplayed the importance of evaluation apprehension and has stressed the use of nominal groups to avoid production blocking. The growing body of research on shyness and brainstorming call into question this suggestion. It appears that for shy persons, evaluation apprehension is a major obstacle to performance and the use of nominal groups does not remove that obstacle.

In a related issue, previous research found that trained group facilitators and performance goals eliminated the performance deficit between nominal and interacting groups (Offner et al., 1996; Oxley et al., 1996; Paulus & Dzindolet, 1993). Would these, or similar, interventions also reduce the performance deficit found between shy and not-shy people? Zimbardo and Linsenmeier (1983), in their study of shyness and group decision making, found that if shy persons were given continuously updated information on the amount of time that they talked in the group relative to the other group members, then their participation increased.

Interestingly, the anxiety they experienced did not decrease. It would seem that goals would affect the brainstorming performance of shy people, but further research on this issue, the use of group facilitators, and the relationship between shyness and brainstorming in general is needed.

Given the increasing popularity of task groups in the workplace, should a person's shyness be considered when making hiring decisions? While many personality variables likely serve as good predictors of job performance, it is important not to generalize the findings from this study beyond the limited setting in which they were gathered. The study reported here, consistent with the majority of research on task-oriented groups, examined the behavior of shy persons during one brief interaction as part of a group that existed only for the duration of the experimental session. It is exactly these types of situations that maximize the social anxiety experienced by shy persons. It remains an open question as to how performance would change beyond this initial group interaction or as a part of a permanent group.

There are several reasons to believe that these performance differences would be reduced in other situations. The initial stages of group formation are marked by increased reports of anxiety amongst all group members. However, anxiety levels often drop quickly over the course of several group meetings (Forsyth, 1999). It seems reasonable to assume that the anxiety experienced by shy persons would also reduce over this time, especially when shy persons tend not to display marked shyness when interacting with close friends. As shy persons begin to form friendships in their task groups, these new friendships may further reduce the performance differences between shy and not-shy persons. Shy persons report using friends to help them actively cope with their anxiety and increase their participation in social interactions (Bradshaw, 1998). Lastly, other research suggests that as shy persons develop knowledge of a particular topic, which would be likely in a permanent task-oriented group, their shy behavior disappears while discussing that topic (Manning & Ray, 1993). Future research is needed to address these issues as that research examines the effects of shyness on group performance over time.

With the increasing specialization of psychology, there is less and less contact between the different research areas. Researchers are undoubtedly currently seeking the answers to questions which have already been answered by someone in a different area of specialization.

This disconnect between psychologists limits the development of the field and its acceptance amongst the general public. The current study extends research on shyness from a focus on individuals and dyadic interactions to small groups and, at the same, helps combine two divergent research areas. This combination adds to our understanding of both shyness and small group performance.

REFERENCES

Bradshaw, S. D. (1998). I'll go if you will: Do shy persons utilize social surrogates? *Journal of Social and Personal Relationships, 15*, 651-669.

Bradshaw, S. D., & Stasson, M. F. (1998). Attributions of shy and not-shy group members for collective group performance. *Small Group Research, 29*, 283-307.

Camacho, L. M., & Paulus, P. B. (1995). The role of social anxiousness in group brainstorming. *Journal of Personality and Social Psychology, 68*, 1071-1080.

Caspi, A., Elder, G. H., & Bem, D. J. (1988). Moving away from the world: Life-course patterns of shy children. *Developmental Psychology, 24*, 824-831.

Cheek, J., & Buss, A. (1981). Shyness and sociability. *Journal of Personality and SocialPsychology, 41*, 330-339.

Cheek, J., & Melchior, L. (1990). Shyness, self-esteem, and self- consciousness. In H. Leitenberg (Ed.), *Handbook of social and evaluation anxiety* (pp. 47-84). New York: Plenum Press.

DePaulo, B. M., Kenny, D. A., Hoover, C., Webb, W., & Oliver, P. V. (1987). Accuracy of person perception: Do people know what kinds of impressions they convey? *Journal of Personality and Social Psychology, 52*, 303-315.

Diehl, M., & Stroebe, W. (1991). Productivity loss in brainstorming groups: Tracking down the blocking effect. *Journal of Personality and Social Psychology, 61*, 392-403.

Forsyth, D. R. (1999). *Group dynamics* (3rd ed.). Pacific Grove, CA: Brooks Cole.

Garcia, S., Stinson, L., Ickes, W., Bissonnette, V., & Briggs, S. (1991). Shyness and physical attractiveness in mixed-sex dyads. *Journal of Personality and Social Psychology, 61*, 35-49.

Goldfried, M. R., Padawar, W., & Robbins, C. (1984). Social anxiety and the semantic structure of heterosocial interactions. *Journal of Abnormal Psychology, 93*, 87-97.

Gough, H., & Thorne, A. (1986). Positive, negative, and balanced shyness: Self-definitions and the reactions of others. In W. Jones, J. Cheek, & S. Briggs (Eds.), *Shyness: Perspectives on research and treatment* (pp. 205-226). New York: Plenum Press.

Jones, W., & Carpenter, B. (1986). Shyness, social behavior, and relationships. In W. Jones, J. Cheek, & S. Briggs (Eds.), *Shyness: Perspectives on Research and treatment* (pp. 227-238). New York: Plenum Press.

Leary, M. R. (1983). Social anxiousness: The construct and its measurement. *Journal of Personality Assessment, 47*, 66-75.

Leary, M. R., Knight, P. D., & Johnson, K. A. (1987). Social anxiety and dyadic conversation: A verbal response analysis. *Journal of Social and Clinical Psychology, 5*, 34-50.

Manning, P., & Ray, G. (1993). Shyness, self-confidence, and social interaction. *Social Psychology Quarterly, 56*, 178-192.

Mullen, B., Johnson, C., & Salas, E. (1991). Productivity loss in brainstorming groups. *Basic and Applied Social Psychology, 12*, 3-24.

Offner, A., Kramer, T., & Winter, J. (1996). The effects of facilitation, recording, and pauses on group brainstorming. *Small Group Research, 27*(2), 283-298.

Osborn, A. F. (1957). *Applied imagination*. New York: Scribner.

Oxley, N., Dzindolet, M., & Paulus, P. (1996). The effects of facilitators on the performance of brainstorming groups. *Journal of Social Behavior and Personality, 11* (4), 633-646.

Paulus, P., & Dzindolet, M. (1993). Social influence processes in group brainstorming. *Journal of Personality and Social Psychology, 64*(4), 575-586.

Pozo, C., Carver, C., Wellens, A. R., & Scheier, M. (1991). Social anxiety and social perception: Construing others' reactions to the self. *Personality and Social Psychology Bulletin, 17*, 355-362.

Zimbardo, P. (1977). *Shyness: What it is and what to do about it.* NY: Addison-Wesley.

Zimbardo, P., & Linsenmeier, J. (1983). *The influence of personal, social, and system factors on team problem solving*. Office of Naval Research Final Technical Report (z-83-01). Stanford University.

An Interview with Bruce A. Bracken and R. Steve McCallum, Authors of the Universal Nonverbal Intelligence Test (UNIT)

Bruce A. Bracken
University of Memphis

R. Steve McCallum
University of Tennessee - Knoxville

(interviewed on behalf of NAJP by)
Michael F. Shaughnessy
Eastern New Mexico University

NAJP: How has the concept of intelligence changed over time?

BAB & RSM: At the turn of the century, assessed intelligence was assumed by most to provide a measure of general or overall cognitive ability, primarily as a result of Spearman's early work in factor analysis. Spearman demonstrated that cognitive tasks were typically intercorrelated to a moderate degree and produced a single large general factor (g), with minor additional factors. In the main, intelligence was viewed as a general ability that permeated virtually all life tasks and behaviors. Later, with the work of Thurstone and later still Vernon, intelligence was viewed hierarchically as a combination of 'primary' cognitive abilities (e.g., verbal comprehension, reasoning, memory, quantitative) with psychometric *g* at the apex. Similar to these early conceptualizations, Carroll's current Three-Stratum approach to intelligence emphasizes psychometric *g*, primary abilities (as represented in the Horn-Cattell *Gf-Gc* model), and a third level of much more specific cognitive abilities (e.g., visual scanning). So, "*g*" remains important to many, but there is attention to the smaller "splinter" skills also. At present, there is some debate over the relative importance of *g* and whether *g* is a particularly meaningful construct or simply a statistical artifact. Also, in the past decade a "process-oriented" approach to intelligence has developed, especially as the processes are related to neurological functioning. The Kaufman Assessment Battery for Children

---

Author's info: Correspondence should be sent to: Dr. Michael Shaughnessy, Psychology Dept., Eastern New Mexico U., Portales, NM 88130.

North American Journal of Psychology, 1999, Vol. 1, No. 2, 277-288.
©NAJP

(K-ABC) and the Das-Naglieri Cognitive Assessment System (CAS) are two intelligence tests that reflect Luria's clinical and theoretical work. Some new repackaging of intelligence as a psychological construct has emerged in the past few years, which seems to have developed a following by educators. Gardner has presented the concept of "multiple intelligences", which is similar in some respects to Thurstone's multiple primary abilities. Gardner proposed different types of multiple "intelligences," including constructs that are not widely accepted as true cognitive abilities (e.g., music). Unfortunately, because intelligence is accepted as such a powerful construct, virtually all fields have adopted the moniker and applied it to disparate aspects of human functioning, including the arts and social-emotional adjustment (e.g., emotional intelligence). These latter mentioned "intelligences" are not widely accepted as legitimate facets of intelligence and may well fade away once they have been researched and explored fully.

NAJP: How important is I.Q. testing in the big scheme of things?

BAB & RSM: Assessing intelligence is a very important activity in psychology and has been important since early researchers discovered the explanatory and predictive power of intelligence test results. The incidence of intelligence testing in society has increased as our awareness that test results have provided a meaningful contribution to decision-making in many aspects of our day-to-day lives (e.g., education, military, health-care, industrial/vocational). Intelligence test results (i.e., IQs) have been shown to be significantly related to a very broad spectrum of life events. O'Toole and Stankov (1992) are among many who have made such powerful claims as "Psychological tests are arguably the most important contribution psychology makes to the practical aspects of our lives." Related to the previous quote, others have written more specifically about the value of intelligence testing. Consider the following two quotes by Wilson (1978) and Sattler (1990). Wilson claimed that "Among the capabilities of human beings, none is as distinctive nor as central to his other adaptive potential as intelligence." Sattler goes a bit farther and suggests that "The IQ has a larger collection of correlates predictive of success in a wide variety of human endeavors than does any other variable." Currently, the controversies in the field seem to focus on the breath and depth of the construct, and particularly on the thorny issues associated with operationalizing it.

NAJP: Why are we so fixated on I.Q. testing?

BAB & RSM: We are "fixated" on intelligence testing because IQ has been shown to be significantly related to such diverse "life" variables as activity level; adaptive behavior; alcohol, drug, and health related problems; basic concept acquisition; comprehension of patient's rights; coping skills; criminal and delinquent behavior; educational achievement; employment success; intellectual quality of pupil talk; leadership; memory in the elderly; mid-life mortality; morality; nonorganic failure-to-thrive; outcome among psychiatric patients; receptive, expressive, and overall language development; prejudice; reaction time; school deportment; success in infantry training, and verbal fluency. The fact is that intelligence is a powerful predictor of most things that are important in our lives, and professional and lay people alike have come to recognize this fact.

NAJP: What are the weaknesses of I.Q. testing as it currently stands?

BAB & RSM: One of the major weaknesses of intelligence testing includes a societal over-emphasis on the term "IQ". IQ is merely a standard score that indicates a person's current level of cognitive functioning (on a set of representative tasks) relative to others of the same age. Also, in the minds of many, IQ takes on qualities that are outdated and unwarranted. For example, many people believe that IQ is a fixed human characteristic; that is, that IQ doesn't change over time. Although intelligence is quite stable, it is not fixed and has been known to change fairly dramatically in response to changes in the individual (e.g., accident, trauma, therapy), the environment (e.g., enriched or impoverished), the test used, or the age of the test (i.e., tests systematically produce higher scores as their norms age). A particular strength of current efforts to assess intelligence is the focus on explicating the link between assessment and intervention. Most authors of current measures address this issue much more carefully than did authors in years past.

NAJP: Why another I.Q. test? We have the Stanford Binet, the WISC-III and the KAIT. Do we really need another one?

BAB & RSM: The WISC-III, Binet-IV, and other language-loaded intelligence tests are fine instruments and have served the many examinees very well; however, such language-loaded intelligence tests have not been fair to all students. Psychologists have long questioned the utility of using language-loaded intelligence tests to assess the general intellectual abilities of children who speak English as a second language (ESL) or who have language-related disabilities. Test bias occurs whenever a test produces "construct irrelevant variance," and when psychologists use the WISC-III or Binet IV to assess the intellectual abilities of children who are autistic, selective or elective mute, deaf, expressive language disabled, or ESL they confound the assessment of intelligence with the child's limited language proficiency. Because the *Universal Nonverbal Intelligence Test* (UNIT) is administered in a 100% language-free manner, it allows psychologists to assess the construct of intelligence in a fairer and more equitable manner whenever the child's hearing or language problems or differences inhibit communication.

NAJP: How is the UNIT different from other intelligence tests?

BAB & RSM: There are two tacks to take with this question. The first is to respond to the question of how is the UNIT different from other intelligence tests (language-loaded and nonverbal); the second tack is to respond by indicating how the UNIT is similar to other intelligence tests? Let's focus on the latter issue first. Unlike some nonverbal intelligence tests that purport to assess "nonverbal intelligence" (e.g., Test of Nonverbal Intelligence, Comprehensive Test of Nonverbal Intelligence, Matrix Analogies Test), the UNIT was designed to assess the same construct that is assessed by traditional tests such as the WISC-III and Binet-IV (i.e., general intelligence). Correlations between the UNIT and other major intelligence tests clearly demonstrate that the UNIT assesses general intelligence, and appears to assess it much like the language-loaded tests do. Therefore, the UNIT and the other major intelligence tests were all designed to assess the same construct, general intelligence. It is primarily the method by which the construct is assessed that makes the UNIT different from other instruments, such as the WISC-III and Binet-IV. Because the UNIT requires no receptive or expressive language abilities for its administration, the UNIT is especially desirable whenever children's limited language facility confounds examiners' ability to accurately assess their intellectual skills.

NAJP: For what types of students and populations is the UNIT most appropriate?

BAB & RSM: The UNIT is appropriate whenever examiners have concerns about the 'fair assessment' of children due to their limited language abilities. There are many children who have been greatly disadvantaged and inappropriately tested over the years with language-loaded intelligence tests. The UNIT was designed to offer examiners a reasonable alternative to using language-loaded tests when they are not appropriate. Although some psychologists have employed the 'performance' scales of the WISC-III and Binet-IV to gain a more equitable assessment when the child's language was an issue, it should be recognized that performance scales are not appropriate because these scales have subtests that are laden with verbal directions. Use of a performance scale may be 'fairer' than using a verbal scale; however, it still is problematic for the child whose language or hearing is limited. In summary, the UNIT was intended for a wide variety of children who have difficulty communicating verbally, including those who are deaf or hard of hearing, have autism or Asperger's disorders, selective or elective mutism, language-related learning disabilities, neurological impairments, or those who are culturally different or do not speak English as their primary language.

NAJP: The K-ABC (Kaufman Assessment Battery for Children was thought to be a great advance in culture fair/culture free testing . How is the UNIT different ?

BAB & RSM: The K-ABC was an advancement in the effort to more fairly assess children's abilities and it included a "Nonverbal Scale"; however, all of the K-ABC "nonverbal" subtests were normed with verbal directions! The K-ABC, like all of the other verbally-loaded intelligence tests, requires language, a requirement that is inherently unfair to children with language-related differences or difficulties. The UNIT is not only administered in a totally nonverbal manner, but it was designed to address a variety of other cross-cultural issues. For example, the UNIT has limited cultural content, it reduces the emphasis on speeded responses, it assesses universally important intellectual abilities (i.e., reasoning and memory), and it allows examiners three administration options - - a 15 minute, two subtest Abbreviated Battery; a 30 minute, four subtest Standard Battery; and a 45 minute, six subtest Extended Battery.

NAJP: Some critics of intelligence testing indicate that these tests do not measure the very skills that are essential for success in school and in life. How would you respond in terms of the UNIT ?

BAB & RSM: There is no better predictor of life success, including success in school, than assessed intelligence. Intelligence is a global ability that subsumes many specific abilities, and as such it has much better predictive power than any single specific ability. The UNIT, as a measure of general intelligence, continues this historic precedent and predicts academic achievement exceptionally well.

NAJP: How will school psychologists and diagnosticians receive training in the administration, scoring and interpretation of the UNIT ?

BAB & RSM: The difficulty with acquiring any new comprehensive measure of intelligence is learning how to administer, score, and interpret the test. From the onset, the UNIT was designed to be easily adopted by psychologists and others who have learned to use individually administered, standardized instruments. The task demands of UNIT subtests are familiar to most examiners; the record form is designed for easy use; the Examiner's Manual conveniently combines tables to allow examiners to locate standard scores, percentile ranks, classifications, and confidence intervals in a single location. Most importantly, there are three tools to facilitate learning the UNIT: 1) a high quality training video, 2) a comprehensive training CD-Rom, and 3) a university training guide that includes practice exercises, portions of the Examiner's Manual, and other training materials. In combination, these elements allow examiners to learn the UNIT without having to leave their office.

NAJP: Many school psychologists are already overwhelmed and over worked. How will the UNIT help them in their practice?

BAB & RSM: The UNIT will fit nicely into the typical school psychologist's practice. Compared with the only other truly comprehensive nonverbal measure of intelligence, the Leiter-R, the UNIT is approximately half the price, half the weight, and requires less than half the administration time (of the Leiter-R). The UNIT training materials allow examiners to learn the instrument independently, without having to pay for or attend training workshops. The UNIT's record form provides examiners with a worksheet for calculating scale and subtest variation, and the Examiner's Manual is easily accessible.

NAJP: How will the UNIT help with the hearing impaired, visually impaired or the severely/profoundly retarded ?

BAB & RSM: Because the UNIT is administered in a totally nonverbal fashion, the test is ideal for hearing impaired students. With the UNIT there is no need to administer selected subsets of subtests (e.g., performance tasks), develop special norms (e.g., Anderson and Sisco norms), rely on American Sign Language for administration, or modify the administration in any manner from the way in which the test was normed and standardized. The UNIT has strong ceilings (i.e., for gifted students) and floors (i.e., for retarded children), and smooth item gradients to allow for a smooth transition across the ability levels.

Validity studies were conducted on many exceptional samples and are reported in the Examiner's Manual. The test is ideal for the assessments school psychologists typically are required to perform for eligibility decisions (e.g., retardation, giftedness, learning disabilities), including attention deficit disorders. The UNIT requires that examinees be able to see the stimulus materials, and would not be helpful for blind students.

NAJP: Sternberg once commented that it is possible to make a test that reduces black/white differences if you only create a test of sufficiently low validity/reliability. How would you respond to this ?

BAB & RSM: Sternberg may have been responding to Jensen's and others position that psychometric g is largely responsible for differences between racial/ethnic groups. Typically, the more g-saturated a task, the larger the discrepancy one finds between groups. This is not what we found with the UNIT. UNIT subtests are very reliable and highly g-saturated, with five of the six subtests producing g loadings greater than .70 (only 5 of the WISC-III subtests have g loadings of .70 or greater; only 2 of the Leiter-R subtests have g loadings at .70 or greater). Despite its exceptional psychometric characteristics, the UNIT still produced relatively small Standard Battery FSIQ differences between U.S. whites and Hispanics (2 pts), Native Americans (6 pts.), deaf (6 pts.), African-Americans (9 pts.), and a matched sample of students residing in Ecuador (5 pts.). The UNIT did not compromise reliability or g loadings to obtain small group differences; small group differences likely resulted from the reduced UNIT cultural loadings, fairer tasks and procedures, and the removal of language from the assessment process.

On the other hand, Sternberg might have been simply stating the obvious — if a test is highly error laden the resulting scores will be randomly distributed.

NAJP: Briefly compare/contrast the UNIT to the Comprehensive Test of Nonverbal Intelligence and the other main culture fair tests such as the Leiter-R.

BAB & RSM: Examination of the three tests quickly reveals that the UNIT and Leiter-R are comparable instruments in terms of attention to detail, scope, task variety, attractiveness, and overall quality. The CTONI is limited in scope to six highly similar matrix analogy tasks and the Leiter-R is very expansive with over 20 subtests; the UNIT employs six subtests that vary in format and task demand to efficiently measure general intelligence and two primary abilities (i.e., reasoning and memory) and two secondary abilities (i.e., symbolic and nonsymbolic processing).

There are other salient differences. The CTONI dedicates only three and one-half pages of its 87-page Examiner's Manual to fairness in testing; whereas the UNIT devotes an entire chapter (approximately 25 pages out its 320 page manual) to the topic. The UNIT compares most favorably with other tests in terms of administration time, age of its norms, portability, psychometric innovations (e.g., local reliabilities), normative sample size and characteristics, and many other psychometric and practical aspects. Only the CTONI and UNIT are administered in a totally nonverbal fashion; the Leiter-R requires some limited verbal directions on a few of its subtests. And, although the Leiter-R is appropriate for a wider age range than either the CTONI or UNIT, the UNIT and CTONI have larger normative samples. The UNIT normative sample systematically included 175 children at every age level throughout its 5-17 year age range. The CTONI normative sample is more variable than the UNIT in size (i.e., 101 to 286 subjects per age level) across its 6 to 18 year age range. The Leiter-R sample is even more variable and includes fewer than 100 subjects in six of its age groupings (i.e., 8, 10, 11, 14-15, 16-17, and 18-20 age levels). UNIT norm tables are consistently presented throughout the age span at 3 month age intervals. The CTONI reports scores only by full year age intervals and the Leiter-R norm tables vary from intervals of two months to one year across the age span. Overall, the UNIT combines sound theory, strong psychometrics, brief administration, user-friendly materials, desirable size, weight, and packaging, and careful consideration of fairness in testing to create what we believe is the psychologist's best option for nonverbal assessment.

NAJP: What cautions have you for examiners using the UNIT ?

BAB & RSM: The scoring and interpretation of the UNIT is straightforward, like other standardized tests of intelligence. Consequently, examiners will find considerable positive transfer. However, because of the unique nature of the nonverbal test administration, examiners must know the particular administration procedures well. The test is administered without any verbalization; as a result, examiners must be familiar with the appropriate strategies for communicating task demands, such as the use of gestures, and the proper procedures for using the demonstration, sample, and checkpoint items. These procedures are describe in detail in the Manual. Because the test directions are nonverbal examiners might get the idea that the test administration session should be silent and stilted. Not so! If the examiner has a common language he/she can and should talk to the examinee to establish and maintain rapport. However, the conversation cannot be related to the test administration; it may be about every day life events (e.g., sports, school, home).

NAJP: How can we best train teachers to work with students from different culture/racial/ethnic backgrounds ? How can the UNIT help ?

BAB & RSM: Many teacher behaviors will not change remarkably as a function of changing student populations. Many of the characteristics of good teachers (e.g., organization, pacing, rigor, warmth) remain the same no matter who they teach. However, teachers who work with students from different culture/racial/ethnic backgrounds must build on these basic skills (i.e., they must be familiar with the unique backgrounds of their students). For example, acceptable teacher-student behaviors in one cultural context may not be acceptable in another cultural context. Also, effective motivational strategies may vary somewhat across cultures. The UNIT can help teachers by providing a picture of students' unique cognitive strengths and weaknesses (e.g., memory, reasoning, symbolic vs nonsymbolic processing, planning, impulsivity), which will help teachers better understand students. The UNIT Manual has considerable information about test interpretation, including specific hypotheses regarding educational implications of particular patterns of scores within and across cultures.

NAJP: What do you see as the UNIT's strengths and weaknesses?

BAB & RSM: The UNIT provides a 100% nonverbal assessment of intelligence, the only multidimensional test to do so. The UNIT provides a complete and comprehensive chapter on test fairness, the only intelligence test to do so; the chapter describes extraordinary efforts the authors and the publisher took to ensure fairness in testing to various cultural/ethnic groups. Even given its nonverbal nature, the test is easy to administer and score. The standardization sample is large and very representative, and it includes special populations as they are represented in the U.S. population, such as ESL students, those who have learning disabilities, language deficits. Another strength is the flexible administration options (e.g., Abbreviated, Standard, and Extended Batteries). The UNIT's greatest strength, its totally nonverbal nature, may be seen as a weakness under some conditions. For example, the test does not provide a direct measure of verbal abilities (e.g., Vocabulary); however, to diminish this potential weakness, the UNIT's Symbolic subtests were designed to be more easily solved by those who are facile with language symbols (e.g., American Sign Language, any foreign language). The UNIT, therefore, allows examiners to consider the examinees' language processing, without the requirements of receptive or expressive language, which should be useful in many language-related learning disability diagnoses where language processing is the central issue. Examinees who need a direct measure of language functioning, however, will need to administer a subtest or scale from another instrument. As examiners get more familiar with the "cross-battery assessment" approach described by McGrew and Flannagan in their recent book, *The Intelligence Test Desk Reference*, examiners will become increasingly comfortable with the use of subtests from various test batteries to gain a complete picture of an individual's cognitive profile. Some will consider the UNIT's overall length to be a weakness. The test contains a maximum of six subtests; however, we identified and modified six well known tasks to create six subtests which individually and collectively provide a very strong estimate of psychometric "g" and considerable additional information regarding students' specific strengths and weaknesses.

NAJP: Why have test companies been hesitant to develop culture fair/culture free tests in the past ?

BAB & RSM: Actually, there have been some relevant measures developed over the years, such as the Cattell and the original Leiter. However, the need has grown exponentially in this country with the recent influx of immigrants, particularly Hispanic-Americans and Asian-Americans. One recent estimate indicated that approximately 200 languages are spoken in the Chicago Public Schools and over 150 languages are spoken in the public schools in the state of California. Also, examiners who serve diverse populations of children and children with certain disabilities (e.g., hearing impairments) have become more sophisticated and more aware of the particular needs of their clients.

NAJP: What advances have been made in the assessment of culturally different children?

BAB & RSM: Experts suggest that tests designed for culturally different children should exhibit certain characteristics, including de-emphasis on language, response time, and culturally-loaded item content. In the past few years several nonverbal tests have been published; in addition to the UNIT the Leiter has been revised and restandardized. Current nonverbal tests de-emphasize language and to varying degrees these tests have also de-emphasized response time and cultural content.

NAJP: Some critics indicate that multicultural education is not needed and superfluous. How would you respond?

BAB & RSM: Families and cultural groups are motivated to pass on ethnic and cultural values to their children—these ties to their cultural past are important to children and their families. Knowledge of these ethnic and cultural differences also help educators better understand culturally different children. We believe that the schools have a responsibility to provide a common educational culture and to promote unity among diverse student bodies. We also believe that it is possible to encourage unity while promoting an appreciation of ethnic and cultural diversity. Multicultural education is appropriate when used to supplement and elaborate upon the core curriculum, but should not be the primary focus of instruction. Foreign-born children who enter schools without English competence need to acquire English skills as soon as possible. It is impossible for school systems to offer instruction in the large number of languages represented in some school districts.

NAJP: What is the theoretical model for the UNIT ?

BAB & RSM: We define the essence of intelligence as complex problem-solving using memory and reasoning. Our goal is to define intelligence as concisely as possible, and to assess it accordingly. The theoretical model of the UNIT is hierarchical, with "g" at the apex. Two primary subordinate constructs are reasoning and memory. Three of the six subtests assess complex memory and three assess reasoning. In addition, tasks included on three subtests can be solved more readily by using symbolic processing; examinees verbally mediate (covertly or subvocally), using whatever language system they typically employ (e.g., ASL, English, Spanish). Three of the subtests are more abstract and less amenable to language mediation. The following scale scores are provided by the UNIT : Full Scale IQ, Memory Quotient, Reasoning Quotient, Symbolic Quotient, and Nonsymbolic Quotient. The following six subtests yield individual standard scores (M = 10; SD = 3): Analogic Reasoning, Cube Design, Mazes, Symbolic Memory, Spatial Memory, and Object Memory.

NAJP: Many teachers are fond of Howard Gardner's "frames of mind." How does the UNIT fit into this scenario ?

BAB & RSM: The UNIT model is similar in that it also describes multiple cognitive abilities; however, the UNIT model is more concise than Gardner's. Gardner describes some eight intelligences. Of course, he is not the first theorist to talk about the importance of multiple abilities. In the 1930s Thurstone described 7 primary mental abilities, several of which sound very much like Gardner's (e.g., spatial, verbal, quantitative). Later Guilford described 120 different cogntive abilities! One of the most influential current models of intelligence is the so-called Cattell-Horn-Carroll Model, which includes nine primary abilities, and many more subordinate constructs. Like Gardner, Thurstone, and others, we believe that intelligence is multidimensional, but unlike these theorists we believe the essence of intelligence can be defined much more concisely--primarily as memory and reasoning. And importantly, we believe that "g" is the single most important component of intelligence. Psychometric "g" is conceptualized as the overarching and pervasive cognitive ability that underlies most of complex problem solving behavior. So, one very important difference between our model and Gardner's is that his is very inclusive and our model is very concise. Unlike Gardner, we are unwilling to call certain abilities "intelligence" (e.g., bodily/kinesthetic ability, musical skills). These abilities are important aspects of human behavior, but they are not aspects of intelligence, in our opinion.

NAJP: What reception has the UNIT received thus far from clinicians in the field ?

BAB & RSM: We have been pleased at the reception the UNIT has received from clinicians. In fact, we just heard last week that the test has gone into the fourth printing and it was published just over one year ago. We have been invited to speak to over 50 school systems and/or state psychology conventions since before the test was published. Also, we have been invited to present the UNIT to attendees at several national conferences and three international meetings. Several large city school systems have adopted the UNIT as their nonverbal "test of choice" and several states consider the UNIT as a viable solution to the under-identification of minority gifted children and over-identification of minority children in programs for educationally or mentally handicapped.

REFERENCES

O'Toole, B. I. & Stankov, L. (1992). Ultimate validity of psychological tests. *Personality and Individual Differences, 13*, 699-716.

Sattler, J. M. (1990). *Assessment of Children*. San Diego, CA: Jerome M. Sattler.

Wilson, R. S. 1978. Synchronics in mental development: An epigenetic perspective. *Science, 202*, 939-948.

Religious Orientation and Religious Experience

John Maltby
Sheffield Hallam University

There are little data that support the validity of the Religious Quest construct. To address this, 103 respondents (74 women, 29 men; mean age=23.4) from three Church of England groups in South Yorkshire, England completed measures of Religious Quest, Intrinsic Religiosity, Extrinsic Religiosity and Religious Maturity. Religious experience correlated significantly more positively with Quest scores than it did with Extrinsic Religiosity. The results suggest that the Quest orientation dimension may reflect a greater religious maturity than one of the other two religious dimensions.

The Quest religious orientation typifies the individual for whom religious involvement is "an open-ended, responsive dialogue with existential questions raised by the contradictions and tragedies of life" (Batson, Schoenrade & Ventis, 1993, p. 169). The Quest orientation is thought to subsume three religious factors (Batson, *et al.*, 1993) and is measured by the Quest scale (Batson & Schoenrade, 1991b).

The first of these factors is the ability to address existential questions without reducing their complexity ("I have been driven to ask religious questions out of a growing awareness of the tensions in my world and in my relation to my world" [item 2 from the Quest scale]). The second is the tendency for the individual to perceive self-criticism and religious doubt as positive ("It might be said that I value my religious doubts and uncertainties" [item 5 of the Quest scale]). The third is a tentativeness or openness to change in religious belief ("As I grow and change, I expect my religion also to grow and change" [item 9 of the Quest scale]). As a result, individuals who have adopted a Quest orientation are thought to demonstrate open-mindedness, self-reliance and self-fulfillment. Further, it is argued that the Quest orientation towards religion is thought to be distinct from the intrinsic (where religion is personal and central to the individual) and extrinsic (where religion provides protection, consolidation, social status and allows religious participation) orientations towards religion. Individuals who display a Quest orientation are believed to have a more mature expression of religion, inasmuch as they are thought to be closer to achieving self-

---

Author's info: Correspondence should be sent to: Dr. John Maltby, School of Health, Sheffield Hallam U., Sheffield, England S10 2BP

North American Journal of Psychology, 1999, Vol. 1, No. 2, 289-292.

© NAJP

fulfillment than those who have either an intrinsic or extrinsic orientation (Baston & Schoenrade, 1991a; Batson, *et al.*, 1993).

Whether or not individuals who have a Quest orientation actually display greater religious maturity, as described above, is debatable (Wulff, 1997; Beit-Hallahmi & Argyle, 1997). Theological and Bible study students score higher on Quest measures than other students (Batson, *et al.*, 1993). However, it has also been argued that due to a significant positive relationship between Quest and a measure of religious questioning (Spilka, Kojetin & McIntosh, 1985), high scores on Quest may not reflect religious maturity, rather an individual's religious conflict (Spilka, *et al.*, 1985). In response to this argument Batson and his colleagues proposed that attempts to solve religious conflict may reflect religious maturity (1993). However, at present, there are no other data that examine this empirical proposition.

One plausible indicator of religious maturity might be varieties of religious experience (James, 1902). Individuals who are conceptualized as high in religious experience are those who have undergone a number of religious experiences that are believed to lend themselves to self-fulfillment (Wulff, 1997). Greeley (1975), using a national USA sample, suggested a number of statements ("A feeling of deep and profound peace," "A sense that I am bathed in light," "A confidence in my own personal survival") that, he argued, reflected religious experience. Thus, if those individuals who are high in religious experience are thought to have undergone a number of religious experiences (Wulff, 1997), a way to examine the validity of the Quest dimension would be to compare the number of religious experiences of individuals, as defined by Greeley (1975), with scores on religious orientation scales. Therefore, if Quest reflects religious maturity, it would be expected that a Quest orientation toward religion would be correlated higher with number of religious experiences than would both an intrinsic and extrinsic orientation toward religion.

The aim of the present study was to examine the relationships between scores on the three main religious orientation measures and relate them to the level of religious experience.

METHOD

103 respondents (74 women, 29 men; mean age=23.4 yrs.) from three Church of England groups in South Yorkshire, England completed a number of religious measures. The first was the "Age-Universal" I-E scale (Gorsuch & Venable, 1983), derived from the Religious Orientation scale (Allport & Ross, 1967), which uses

simplified language to measure both intrinsic and extrinsic orientation toward religion. The second instrument was a 12-item measure of Quest (Batson & Schoenrade, 1991a; 1991b), and the third, an indicator of religious experience. This latter scale was created from Greeley's (1975) descriptors of religious experience. It consisted of 18 items, with two items reversed:

A feeling of deep and profound peace
A certainty that all things would work out for the good
Sense of my own need to contribute to others
A conviction that love is the centre of everything
Sense of joy and laughter
An experience of great emotional intensity
A great increase in my understanding and knowledge
A sense of the unity of everything and my own part in it
A sense of new life and living in a new world
A confidence in my own personal survival
A feeling that I could not possibly describe what was happening to me
The sense that all the universe was alive
The sense that my personality has been taken over by something much more powerful than I am
A sensation of warmth and fire
A sense of being alone (reversed)
A loss of concern about worldly problems
A sense that I am being bathed in light
A sense of desolation (reversed)

RESULTS

Cronbach's alpha reliability co-efficients (Cronbach, 1951) were computed for all the scales used, with no reliability statistics falling below .75 (Quest, α=.80; Intrinsic, α =.83; Extrinsic, α =.76; Religious Experience, α =.75). This suggests that scales are demonstrating satisfactory internal reliability among the present sample.

Pearson product moment correlation coefficients (with age partialled out) were computed between all the measures. The reason age was partialled out was that age could be a contributing factor to the number of religious experiences an individual may have had. Simply put, older persons have had time for more religious experiences. The Quest measure shared a significant correlation with both the intrinsic orientation measure (r=.22, p<.05) and the extrinsic orientation measure (r=.20, p<.05). Further the Intrinsic Orientation and Extrinsic orientation measures shared a significant negative relationship (r = -.25, p <.01). In addition, scores on religious experience were positively and significantly correlated with Quest scores (r=.44, p<.001), Intrinsic orientation (r=.35, p<.001), and Extrinsic orientation (r=.21, p<.05).

Tests for differences between dependent correlations showed that .44 was significantly higher than .21, t = 2.25, p <.05. However, .44 was not significantly higher than .35, t = .83.

DISCUSSION

The significant but moderate relationships between these three religious orientation measures suggests that each measure reflects somewhat different measures of religiosity. In terms of the main aims of the present study, the Quest Orientation was more highly correlated with religious experience than was the Extrinsic orientation. This finding suggests that the Quest orientation dimension may reflect a greater religious maturity (closer to self-fulfillment) than at least one of the other two religious dimensions. While the present study found some further evidence for the empirical validity of the Quest construct, it is clear that much more is needed. .

REFERENCES

Allport, G.W. & Ross, J.M. (1967). Personal religious orientation and prejudice. *Journal of Personality and Social Psychology, 5*, 432-433.

Beit-Hallahmi, B. & Argyle, M. (1997). *The psychology of religious behaviour, belief & experience*. London: Routledge.

Batson, C.D. & Schoenrade, P. (1991a). Measuring religion as Quest: 1) Validity concerns. *Journal for the Scientific Study of Religion, 30*, 416-429.

Batson, C.D., & Schoenrade, P. (1991b). Measuring religion as Quest: 2) Reliability concerns. *Journal for the Scientific Study of Religion, 30*, 430-447.

Batson, C.D., Schoenrade, P. & Ventis, W.L. (1993). *Religion and the individual*. New York: Oxford University Press.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika, 16*, 297-334.

Gorsuch, R.L. & Venable, G.D. (1983). Development of an "Age-Universal" I-E scale. *Journal for the Scientific Study of Religion, 22*, 181-187.

Greeley, A.M. (1975). *The sociology of the paranormal*. London, Sage.

James, W. (1902). *The varieties of religious experience: A study in human nature*. (2nd Ed). New York: Longmans, Green.

Spilka, B., Kojetin, B. & McIntosh, D. (1985). Forms and measures of personal faith: Questions, correlates and distinctions. *Journal for the Scientific Study of Religion, 24*, 1-20.

Wulff, D.M. (1997). *Psychology of religion: Classic and contemporary*. (2nd Ed). London: John Wiley & Sons.

Levels of Elaboration, Interference and Memory for Vocabulary Definitions

Michael Shaughnessy
Eastern New Mexico University

Dale Dinnell
University of Washington

A levels of elaboration perspective was employed in five experiments to test the differential resistance to interference of two methods of learning vocabulary words. Experiment 1 contrasted a keyword mnemonic method requiring elaborate processing with a sentence generation method requiring limited elaboration and a control condition. The results indicated a superiority of the keyword mnemonic over the sentence generation condition in terms of participants' recognition of the vocabulary definition. Experiments 2 and 3 then examined the differential resistance to interference of the two vocabulary acquisition techniques. In both Experiments 2 and 3, the keyword method did not seem to be influenced by interference, while the sentence generation method was. Experiments 4 and 5 were then conducted with subjects drawn from a younger population in order to reduce an observed "ceiling effect" and to replicate Experiments 2 and 3 with cued recall as the dependent measure. The results followed the general pattern observed in Experiments 2 and 3. Overall, the results of the study suggest that vocabulary acquisition methods may prove to be a fruitful area in which to test the elaboration perspective and other variants of the levels-of-processing framework.

The levels-of-processing framework for viewing memory proposed by Craik and Lockhart (1972) has sparked considerable research on memory for word lists (e.g, Johnson-Laird & Bethell-Fox, 1978) and memory for prose (e.g., Glover, Plake, Roberts, Zimmer and Palmere, 1981). Despite the apparent applicability of this framework for educationally relevant phenomenon such as memory for prose and memory for general learning activities (Kunen, Cohen & Solman, 1981), it has been infrequently employed in examinations of other educationally relevant processes. In specific, little research on the acquisition of vocabulary has been conducted from the "levels" perspective. The current study, then, represents an attempt to examine students' memory for definitions of vocabulary words from a variant of the levels-of-

---

Authors' info: Correspondence should be sent to: Michael F. Shaughnessy, Psychology Dept., Eastern New Mexico U., Portales, NM 88130.

North American Journal of Psychology, 1999, Vol. 1, No. 2, 293-306.
© NAJP

processing perspective, while addressing some issues related to the "levels" perspective.

In the original "levels" position (Craik & Lockhart, 1972), memory was seen as a byproduct of the analysis of stimuli with more durable memory traces formed as the analysis of stimuli moved from "shallow" (i.e., dealing with superficial aspects of a stimulus array) to "deep" processing (i.e., analyzing the "meaning of a stimulus array"). The original position has been strongly criticized on several occasions (e.g., Baddeley, 1978, Nelson, 1977; Postman, Thompkins, & Gray,1978).

In general, these criticisms have revolved around the circular nature of the "levels" perspective and the absence of an independent means of specifying different depths-of-processing. Several reformations of the original position have been set forth to attempt to deal with its shortcomings, "elaboration of processing" (e.g., Anderson & Reder, 1979; Bradshaw & Anderson, 1982; Craik & Tulving, 1975), distinctiveness-of-encoding (e.g., Jacoby & Craik, 1979; Jacoby, Craik & Begg, 1979), and variations of a "numbers of decisions" hypothesis (e.g., Johnson-Laird & Bethel-Fox, 1978; Johnson-Laird, Gibbs & deMoubray, 1979; Rose, 1982).

However, despite the possibility of employing the Bloom, Englehart, Furst, Hill and Krathwohl (1956) taxonomy as a potential independent means of specifying depth-of-processing in memory for learning activities (Kunen et al 1981) and for memory for prose (e.g., Glover, Plake and Zimmer, 1982), the problem of providing a better operational framework for viewing levels-of-processing remains.

In this regard, a hypothesis set forth by Eysenck (1979) bears examination. He stated that :

> The usual memorial superiority of deep over shallow encodings is due to the fact that deep encodings are less susceptible to proactive and retroactive interference than are shallow encodings. This differential susceptibility to interference is in turn due to the greater trace distictiveness usually associated with deep encodings (p.114)

Eysenck arrived at this view as a consequence of the results of two experiments in which pre-exposure to to-be-learned words had a detrimental effect on participants' recall and recognition of the items in word lists. However, to our knowledge, no follow-up research has examined resistance to interference as a means of specifying depth-of-processing and certainly, no such study has been conducted with educationally relevant materials.

The current study, then, was designed to test the resistance to interference of definitions of vocabulary words that had been processed at different levels. Although the several variations of the original "levels" perspective all have some positive features, the elaboration perspective (e.g., Anderson & Reder, 1979) seemed especially attractive for examining vocabulary acquisition. Experiment 1 presents a simple replication of several studies on the acquisition of word definitions and identifies different levels of elaboration. Experiment 2 contrasts a condition in which elaborate processing of vocabulary items was required with a condition that required less elaboration. Experiment 3 replicates Experiment 2 with the addition of two conditions that allowed for a more direct examination of potential interference effects. Experiment 4 replicates Experiment 3 but employs high school students in order to avoid a "ceiling effect" observed in Experiments 1-3. Experiment 5 replicates Experiment 4 but employs cued recall as the dependent measure.

In specific, Experiment 1 contrasted participants' recall of word definitions in a keyword mnemonic condition (Atkinson, 1975), a sentence generation condition, and a no-strategy control condition. In our view, the keyword condition, in which experimenter-generated keywords and "imposed imagery" (see Pressley, Levin, & Delaney, 1982, p.63) were provided for subjects along with the words and their definitions, required much more elaborate encodings from subjects than the sentence generation condition, in which subjects were given the word and its definition and asked to generate a sentence using the word appropriately, or the no-strategy control condition. We agree with the position set forth by Anderson and Reder (1979) that memory is strongly influenced by the number and type of elaborations made at encoding and we predicted on this basis that the mnemonic keyword condition would, as has been demonstrated several times, result in greater levels of recall than the other two conditions.

EXPERIMENT 1

Method

Participants and setting. Subjects were 129 volunteers drawn from undergraduate educational psychology courses participating for course credit. Individuals participated in small groups (four to eight) that met in a university classroom across a period of four weeks.

Materials. Twenty English words taken from Funk and Tarsis (1981) and Funk (1955) were employed as the to-be-learned materials. The results of a previous pilot study on the same general population of students had indicated that these words were known by fewer than 10 percent of the population from which the current subjects were drawn.

Subjects in the mnemonic keyword condition received each of the 20 words with their definitions, an experimenter-generated keyword, and a description of an experimenter-generated image. An example of a vocabulary word, its definition, the experimenter-generated keyword, and the experimenter-generated image is presented below :

> Word and definition : bibulous - readily taking up fluids or moisture, inclined to drink
> Key word : bib
> Image : A heavy drinker sitting at a bar wearing a bib

Participants in the sentence generation condition and the no-strategy control condition merely received the list of words, their definitions, and blank paper.

General procedures. The several experimental sessions were randomly assigned to one of the three conditions. Hence, all participants in each session were in the same condition. When participants were seated, the experimenter distributed the materials appropriate to the condition they had been assigned to and then read them directions.

All participants were told that they were participating in a vocabulary acquisition study and that they were to try their best to learn the definitions of the words they were given. Further, all participants were informed that they would be tested at the end of the session.

Participants in the mnemonic keyword condition had the use of the mnemonic explained to them and they were instructed to use the method in learning all of their definitions. Participants in the sentence generation condition were told to learn the definitions by writing a sentence using each word on the list correctly. Those in the control condition were asked to learn the definitions of the words in any way they saw fit.

Twenty minutes were allowed for studying in all conditions. Subsequent to the study time, all materials were collected and a multiple choice test over the word defintions was administered. The order of items on the post test was random. Participants marked their answers on score sheets. Ten minutes were allowed for the test.

Results

The recognition data were analyzed in a simple one-way analysis of variance procedure employing conditions as the independent variable and recognition scores as the dependent variable. A significant difference, $F(3,129)=8.42$, $p>.05$ was observed. The Tukey procedure ($=.05$) revealed no significant difference between the between the keyword condition ($M=19.4$, $SD=1.01$, $N=44$) and the control condition ($M=19.4$, $SD=1.07$, $N=42$) However, each of these conditions obtained scores significantly higher than the sentence generation condition ($M=18.6$, $SD=1.60$, $N=43$).

Discussion

The results of Experiment 1 were somewhat surprising in that we had anticipated that the mnemonic keyword condition would be superior to both the sentence generation and the no strategy control condition. However, since we did not control for the processing activities of the subjects in the control condition, it is possible that they chose strategies that individually allowed for fairly elaborate processing. In addition, there was a clear ceiling effect in that the mean scores of all three conditions approximated the maximum score of 20. This issue will be dealt with later in Experiment 4 when we examine the performance of high school students attempting to acquire the same vocabulary items.

The purpose of Experiment 1 was to identify different levels of elaboration in the learning of definitions. The significant difference between the keyword mnemonic condition and the sentence generation condition did meet with our prediction. That is, we hypothesized that because the keyword method required the to-be-learned definitions to be elaborated at least three times (once with the definition presentation, once with the keyword, and once with the image) that memory performance would be greater than in the sentence generation condition in which only two elaborations were required (with the presentation of the defintion and once in the generation of a sentence).

If Eysenck's notions concerning resistance to interference are correct, then the two levels of elaboration identified as the keyword method and the sentence generation method should be differentially affected by interference. Experiment 2 was conducted to test this hypothesis for retroactive interference.

EXPERIMENT 2

Method

Participants and setting. Participants were 81 students drawn from the same population as Experiment 1 participating for course credit. All testing occurred in small groups of four to eight students across a period of three weeks in a typical university classroom.

Materials. The materials were those employed in Experiment 1 with the addition of 20 words drawn from the same sources and previously identified in the pilot testing as at the same level of obscurity as the 20 words used in Experiment 1.

Procedure. The several sessions were randomly assigned to either the keyword mnemonic or the sentence generation conditions. Hence, all subjects in a specific session were in the same condition. Subjects in the keyword condition were presented with the first list of to-be-learned words and all procedures followed for this condition in Experiment 1 were repeated. After the 20 minute study period elapsed, the second set of vocabulary words were presented. Subjects used the keyword method in learning these in the manner previously described.

Participants in the sentence generation condition also received two sets of words, one after the other. They employed the sentence generation procedures previously described for both sets of vocabulary words. Subsequent to completing both lists, all participants completed a 40-item multiple choice test covering both sets of items. The items on the posttest were randomized such that items over the first and second lists of words were thoroughly mixed.

Results

The data from the posttest were analyzed via a repeated measures analysis of variance. The independent variable was the memory condition and the dependent variable was the recognition scores. The first measure was recognition of definitions in vocabulary set 1, while the second measure was recognition of definitions in vocabulary set 2. The analysis revealed a significant difference between conditions, $F\,(1,79) = 7.94$, $p < .01$, and a significant difference by time, $F(1,79) = 42.83$, $p < .01$. In addition, there was a significant condition by time interaction, $F\,(1,79) = 23.54$, $p < .01$.

The Tukey HSD procedure (= .05) was used to follow up the results. In the keyword condition, no significant difference was observed between the first measure (M=18.9, SD=1.7, N=42) and the second measure (M= 19.3, SD=1.71, N=42). However, in the sentence generation condition, a significant difference was observed between the first measures (M=16.6, SD=3.10, N=39) and the second measures (M=18.2, SD= 1.41, N=39). Further, there was a significant difference between the two conditions on the first measures, as well as on the second measure. When the interaction was followed up, a significant difference was observed between the first measure in the sentence generation condition and the second measure in the keyword condition. However, there was no significant difference between the first measure in the keywords condition and the second measure in the sentence generation condition.

Discussion

As could be predicted from Eysenck's (1979) hypothesis, the two levels of elaboration of word definitions seemed to be differentially affected by retroactive interference. Recognition in the keyword condition was highly similar on the first and second measure, suggesting that interference was not a factor. Recall in the sentence generation condition, however, was significantly lower on the first measure than on the second, and considerably lower than what was observed in the sentence generation condition in Experiment 1. However, the procedures employed in Experiment 2 did not employ "no interference" conditions to demonstrate the occurrence of retroactive interference. That is, no conditions were structured such that subjects simply learned the first list and then performed a distractor task while subjects in other conditions learned two lists. In order to deal with this shortcoming, a third experiment was conducted.

EXPERIMENT 3

Method

Subjects and setting. Participants were 68 undergraduate volunteers drawn from the same population participating for course credit. All data were gathered in small group sessions of four to eight students in a regular university classroom.

Materials. The materials were those employed in Experiment 2.

General Procedures. The several sessions were randomly assigned to one of four conditions: keyword mnemonic with one list, keyword mnemonic with two lists, sentence generation with one list and sentence generation with two lists. The keyword mnemonic with two lists and the sentence generation with two lists conditions were identical to the conditions employed in Experiment 2. The keyword mnemonic with one list condition was identical to the keyword condition employed in Experiment 1 with the exception that the posttest was delayed for 20 minutes while the subjects read an essay about the natural history of dogs that did not contain any of the vocabulary words. Similarly, the sentence generation condition was identical to that employed in Experiment 1 except that the posttest was also delayed for 20 minutes while subjects read the same essay.

Results

The data from the posttest (the 20 items covering the first list of words) were analyzed via a simple one-way analysis of variance. The analysis revealed a significant difference, F (3, 64)= 12.59, $p<.01$. The Tukey HSD procedure employing the harmonic means of the cells (.05) indicated no significant differences among the keyword mnemonic with one list (M=19.24, SD=.97, N=17), the keyword mnemonic with two lists (M=19.37, SD=1.20, N=16), and the sentence generation with one list (M=18.29, SD=1.57, N=17) conditions. Each of these conditions, however, had significantly higher recognition scores than the sentence generation with two lists condition (M=16.33, SD=2.40, N=18).

Discussion

The results of Experiment 3 seemed to be in general agreement with those of Experiment 2. That is, learning a second list of vocabulary words seemed to reduce recognition of a first list of words when the sentence generation strategy was employed, but not when the keyword method was used. Hence, it seemed that retroactive interference had no effect in the keyword condition, but a clearly discernable effect in the sentence generation conditions.

A puzzling result was the lack of a significant difference between the sentence generation with one list condition and the two keyword conditions. However, the results of Experiments 2,3, and to some extent, 1 are difficult to interpret because of a "ceiling effect ". In an attempt to deal with this issue, a fourth experiment was conducted with subjects drawn from a high school population.

EXPERIMENT 4

Method

Participants and setting. Participants were 70 high school students (11th and 12 th graders) enrolled in social science courses. All testing occured in small groups of four to eight students across a period of four weeks in an empty classroom.

Materials and procedures. The materials and procedures were identical to those employed in Experiment 3.

Results

The data from the posttest (the 20 items covering the first list of words) were analyzed via a one-way analysis of variance. The analysis indicated a significant difference among conditions, F(3,66)=26.05, *p*<.01. The Tukey HSD procedures using the harmonic means of the cells (=.05) was employed to locate the differences among conditions. Here, the keyword mnemonic with one word list (M=15.83, SD=1.69, N=18) had significantly greater recall than the sentence generation with one list condition (M=12.47, SD=1.84, N=17), and the sentence generation with two lists condition (M=11.50, SD=2.07, N=18). In addition, the keyword mnemonic condition with two lists (M=16.18, SD=2.13, N=17) resulted in signficantly superior recognition than both the sentence generation conditions. No other contrasts reached significance.

Discussion

The results of Experiment 4 showed a clear superiority of the keyword method over the sentence generation method and generally attenuated any "ceiling effect" problem. The results, however, do not match those observed in Experiments 2 and 3. That is, although no effect for retroactive interference was observed in the keyword mnemonic with two lists condition, no significant interference effect was observed in the sentence generation conditions either.

That recognition was about eight percent lower in the sentence generation with two lists condition than in the sentence generation with one list condition seemed to agree with the overall pattern of results observed previously. However, it seemed that a replication of Experiment 4 might shed more light on the matter, particularly if a more stringent measure of memory were employed. For this reason, a fifth experiment was conducted employing cued recall as the dependent measure.

EXPERIMENT 5

Method

Participants and setting. Participants were 64 high school juniors and seniors drawn from the same population employed in Experiment 4.

Materials and procedures. The materials and procedures were identical to those employed in Experiments 3 and 4 except that a cued recall posttest was used in which the vocabulary words (in random order) were listed with blanks alongside them so that students could write in the definitions.

Results

The posttests were scored by two raters (r=.92) and the data analyzed in a one-way analysis of variance. The analysis indicated a significant difference among the conditions, F(3,60)= 7.66, p <.01. The Tukey HSD procedure employing the harmonic means of the cells (=.05) was then employed to locate the significant differences among conditions. The keyword mnemonic with one list condition (M=11.06, SD=2.46, N=17) resulted in significantly superior recall than the sentence generation with two lists condition (M=6.50, SD=3.83, N=16). In addition, the keyword mnemonic with two lists condition (M=11.00, SD=3.42, N=15) resulted in recall significantly superior to that observed in the sentence generation with two lists condition. The sentence generation with one list condition (M=8.81, SD=2.66, N=16) resulted in considerably lower, although not significantly lower recall scores than the two keyword conditions. No other contrasts were significant.

Discussion

The results of Experiment 5 generally supported the results of Experiment 4. That is, the keyword mnemonic conditions were significantly superior to the sentence generation plus two lists condition.

Further, no interference effect was observed in the keyword conditions. And, while no significant interference effect was observed in the sentence generation conditions, the sentence generation with one list condition resulted in recall about 26 percent higher than the sentence generation with two lists condition, demonstrating the same general pattern seen in Experiments 2-4.

GENERAL DISCUSSION

The results of the current study can be summarized as follows. First, a keyword mnemonic condition was equivalent to a control condition and superior to a sentence generation condition in the acquisition of English language vocabulary among college students. Second, no evidence of retroactive interference was observed in the recognition or recall results of mnemonic keyword conditions. Third, recognition and recall of the first list definitions was consistently lower in the sentence generation with two lists conditions than in the sentence generation with one list conditions, suggesting the possibility of retroactive interference.

Frankly, the results are somewhat puzzling. In Experiment 1, we fully anticipated that the keyword method would be superior to both the sentence generation and the control conditions. That the control condition did as well may be partly due to a "ceiling effect" as well as to the possibility that control subjects (who, as college students, must have acquired fairly good vocabulary acquisition strategies) may have employed highly individualized processing techniques that they developed over the years. Further, the results of Experiment 3 did not indicate a clear superiority of the keyword mnemonic conditions over the sentence generation with one list condition. Again, we attribute this lack of difference to the level of sophistication of the subjects and the overall high levels of recognition scores.

In Experiments 2 and 3, the results seem to support our hypothesis that interference would more likely occur in those conditions requiring less elaboration of the material. No interference effects were observed in the mnemonic keyword conditions. Recognition of first lists was as high in the two list conditions as in the one list conditions. Further, when the results of the sentence generation conditions are considered, recall of the first lists was significantly lower in the two list conditions than in the one list conditions. This suggests to us that the retroactive interference may account for lower levels of first list recall in the sentence generation when compared with the two lists conditions.

The results of Experiments 4 and 5 generally fit the patterns of results observed in Experiments 2 and 3. However, although first list recognition and recall was consistently lower in the sentence generation with two lists conditions than in the sentence generation with one list conditions, these differences were not significant. Taken with the results of Experiments 2 and 3, though, they seem to suggest the possibility of retroactive interference effects.

No significant difference in the first list recognition or recall was observed between the mnemonic keyword with two lists and the mnemonic keyword with one list conditions. Apparently, no interference effects were present in the conditions in which the keyword mnemonic was employed. In addition, the results of Experiments 4 and 5 clearly demonstrate the superiority of the keyword mnemonic for both recognition and recall over the sentence generation condition, confirming previous work (see Pressley et al.,1982).

The overall pattern of results can be interpreted from several different perspectives. Despite the lack of a significant difference between the control condition and the mnemonic keyword condition in Experiment 1, it seems clear that the keyword mnemonic offers an advantage beyond that currently described in the literature on resistance to interference. The current results are restricted, however, in that only sentence generation conditions were contrasted with the keyword mnemonic. Additional contrasts of the keyword method to other methods in terms of resistance to interference need to be completed prior to concluding that this is a relatively unique feature of the keyword method. In general the results confirm previous work on the keyword mnemonic (with the exception of Experiment 1 and a part of experiment 3) and extend it to a consideration of interference.

A second viewpoint is the analysis of vocabulary acquisition techniques from an elaboration perspective (e.g., Anderson & Reder, 1979; Craik & Tulving, 1975). That is, techniques such as the keyword mnemonic and the sentence-generation approach seem highly amenable to an analysis based on the number of elaborations carried out by subjects. It would seem that other vocabulary acquisition techniques could also be analyzed from an elaboration perspective- not as a replacement for the more traditional schema theory view of such techniques (e.g., Levin, 1981) but rather as a way of providing an alternative perspective. Other techniques could also be analyzed in order to test the predictions that can be made from an elaboration perspective and from the other variants of the original "levels" framework. In general, we hypothesize that as vocabulary acquisition techniques require greater numbers of elaborations, recognition and recall of the vocabulary items should increase up to some as yet unknown point , where the law of diminishing returns would set in.

Finally, Eysenck's (1979) predictions concerning resistance to retroactive interference were at least partially supported by the results of this study. In Experiments 2 and 3, the keyword mnemonic (the method here that required the greatest number of elaborations) seemed less affected by retroactive interference while the sentence-generation condition (the method here that required fewer elaborations) seemed to be affected fairly strongly by retroactive interference. In Experiments 4 and 5, the same general pattern of results seen in Experiments 2 and 3 was observed, although the presumed retroactive interference effects were not significant.

For educators, this study shows the utility of mnemonics in vocabulary learning. Teachers would do well to use mnemonics whenever possible to make learning more enjoyable and to ensure deep processing. Certain subject areas (e.g. science) may require more mnemonics to learn certain terms, definitions, and terminology. Making learning more distinctive may enhance encoding and later retrieval for all students.

Overall, then, the current study represents an extension of work on the keyword mnemonic to an examination of it's resistance to retroactive interference, and extension of an elaboration perspective to the educationally relevant area of vocabulary acquisition, and a test of Eysenck's (1979) hypothesis. Clearly, however, additional work comparing other vocabulary acquisition techniques based on an elaboration perspective and the examination of proactive interference remains to be completed.

REFERENCES

Anderson, J.R. , & Reder, L.M. (1979). An elaborative processing explanation of depth of processing. In L.S. Cermak & F.I.M. Craik (Eds.), *Levels of processing in human memory*. Hillsdale, N.J. : Erlbaum.

Baddeley, A.D. (1978). The trouble with levels : A reexamination of Craik and Lockhart's framework for memory research. *Psychological Review, 85*, 139-152.

Bloom, B.S., Englehart, M.D., Furst, E.J., Hill, W.H., & Krathwohl, D.R. (1956). *Taxonomy of educational objectives. Handbook I Cognitive domain.* New York : Mc Kay.

Bradshaw, G.L., & Anderson, J.R. (1982) Elaborative encoding as an explanation of levels of processing. *Journal of Verbal Learning and Verbal Behavior, 21*, 165-174.

Craik, F.I.M., & Tulving, E. (1975). Depth of processing and the retention of words in episodic memory. *Journal of Experimental Psychology : General, 104*, 268-294.

Eysenck, M.W. (1979). Depth, elaboration and distinctiveness. In L.D. Cermak & F.I.M. Craik (Eds.), *Levels of processing in human memory*. Hillsdale, N.J. : Erlbaum.

Funk, W.(1955). *Six weeks to words of power.* New York : Pocket Books.

Funk, P., & Tarsis, H. (1981). *Word memory power in thirty days.* Delacorte Press.

Glover, J.A., Plake, B.S., Roberts, B., Zimmer, J.W., & Palmere, M. (1981). Distinctiveness of encoding : The effects of paraphrasing and drawing inferences on memory from prose. *Journal of Educational Psychology, 73*, 736-744.

Glover, J.A., Plake, B.S., & Zimmer, J.W. (1982) Distinctiveness of encoding and memory for learning tasks. *Journal of Educational Psychology, 74*, 189-198.

Jacoby, L.L., & Craik, F.I.M. (1979). Effects of elaboration of processing at encoding and retrieval : Trace distinctiveness and recovery of initial context. In L.S. Cermak & F.I.M. Craik (Eds.). *Levels of processing and human memory.* Hillsdale, N.J. : Erlbaum.

Jacoby, L.F. , Craik, F.I.M., & Begg, I. (1979) Effects of decision difficulty on recognition and recall. *Journal of Verbal Learning and Verbal Behavior, 18*, 585-600.

Johnson-Laird, P.N., & Bethel-Fox, C.E. (1978). Memory for questions and amount of processing. *Memory & Cognition, 6*, 496-501.

Johnson-Laird, P.N., Gibbs, G., & DeMowbray, J. (1978). Meaning, amount of processing and memory for words. *Memory & Cognition, 6*, 372-375.

Kunen, S., Cohen, R., & Solman, R. (1981). A levels-of-processing analysis of Bloom's taxonomy. *Journal of Educational Psychology, 73*, 202-211.

Levin, J.R. (1981). The mnemonic ' 80s: Keywords in the classroom. *Educational Psychologist, 16*, 65-82.

Nelson, T.O. (1977). Repetition and depth of processing. *Journal of Verbal Learning and Verbal Behavior, 16*, 151-171.

Postman, L., Thompkins, B.A., & Gray, W.D. (1978). The interpretation of encoding effects in retention. *Journal of Verbal Learning and Verbal Behavior, 17*, 681-706.

Pressley, M., Levin, J.R., & Delaney, H.D. (1982) . The mnemonic keyword method. *Review of Educational Research, 52*, 61-92.

Ross, B.H. (1981). The more, the better? Number of decisions as a determinant of memorability. *Memory & Cognition, 9*, 23-33.

End note: Thanks to John A. Glover for his many contributions to this article. Both authors would like to thank John A. Glover for his support and encouragement over the years.

Gender and Humor: What Makes a Difference?

Joanne Gallivan
University College of Cape Breton

Sex 'difference' findings are often interpreted to support sex stereotypes and devalue women's experience. Studies showing that women rate humorous stimuli lower than do men have been interpreted as demonstrating that women appreciate humor less. However, these differences could be due to research biases; several studies using feminist or non-sexist humor have shown no differences or reversals of the "typical" pattern. The current study, using Q methodology, showed much overlap between women's and men's perspectives on humor, particularly in rejection of hostile humor and in valuing everyday humor use and coping humor.

Some scholars (e.g., Hare-Mustin & Marecek, 1988) have contrasted "similarity" vs. "difference" traditions in gender research. Some feminists support a "difference" orientation with a positive view of the value of women's differing experiences of and in the world (Kimball, 1995); historically, however, reported sex differences have often been interpreted to support sex stereotypes and to devalue women's experience. In the humor research literature, gender is most frequently considered in terms of sex differences in appreciation and production of humor. For example, Chapman and Gadfield (1976) report that most studies show that men find sexual humor funnier than women. However, they found that women and men differed in appreciation of sexist sexual cartoons, but not nonsexist ones. Thus, it can be argued that studies which find sex differences in appreciation of sexual humor do so because they employ materials which are often disparaging to women.

That explanation, though, seems paradoxical in light of another frequently-reported sex difference. That is, while men typically find hostile humor funnier than do women, both men and women show greater enjoyment of female-disparaging than male-disparaging humor (Cantor, 1976; Losco & Epstein, 1975). However, several studies (Chapman & Gadfield, 1976; Moore, Griffiths, & Payne, 1987; Nias & Wilson, 1977) have found evidence for a relationship between attitudes towards women and appreciation of female-disparaging ("sexist") humor. Women *and* men with less traditional views of women's roles find sexist humor less enjoyable

---

Author's info: Correspondence should be sent to: Joanne Gallivan, University College of Cape Breton, Sydney, NS, Canada B1P 6L2.
(JGALLIVAN@UCCB.NS.CA)

North American Journal of Psychology, 1999, Vol. 1, No. 2, 307-318.

© NAJP

than their more traditional counterparts. This is one illustration of the principle that it is not group membership per se that influences a person's response to humor, but rather one's group *identification* and attitudes towards that and other groups (Lafave, 1972; Lafave, Haddad, & Maesen, 1976).

These examples of "typical" sex differences in humor illustrate several problems with approaches to gender based on "sex differences," rather than gender as a cognitive variable or social category (Deaux, 1984). In spite of mixed findings, attention is focused on results demonstrating a sex difference and the difference achieves the status of a given. In those studies in which a sex difference is found, factors other than the one of interest are not controlled. The difference is ascribed to the wrong source; e.g., it is not *sexual* humor which men tend to find funnier than women, but certain *kinds* of sexual humor (i.e., "exploitative" or "sexist"). The (sex) "group" differences are based on variables other than gender, such as group identification, or certain characteristics which happen to occur more frequently in one gender or the other. For example, it is those with more vs. less traditional views about women's roles who differ in appreciation of female-disparaging humor, not men and women per se.

Crawford (1988a) suggests that, besides these problems, gender bias is often inherent in humor research due to the materials and methods used. With respect to the materials, many people (e.g., Crawford, 1988b; Marlowe, 1984-85: Stillion & White, 1987) argue that most public humor and comedy are mainly male-authored and male-controlled and public joke-telling is normatively male in our culture. What about responses to humor created principally by and for women? One example is feminist humor. Stillion and White (1987) obtained humor ratings for 12 feminist slogans and self-ratings of feminist sympathy from several groups of participants. They found that women tended to give higher ratings than men and that groups with higher feminism ratings tended to rate the stimuli as funnier. A replication of this study (Gallivan, 1992) found similar results, with a significant correlation between humor ratings and feminist sympathy ratings ($\underline{r} = .41$). Thus, there is evidence that both gender and feminist sympathy influence appreciation of feminist humor.

Note that, in these latter studies, higher humor ratings were given by women. As Crawford (1988a, 1988b) points out, women's lower ratings of sexual and hostile humor have often been interpreted as evidence that women are sexually inhibited, overly conventional or generally unappreciative of humor. Ratings of feminist humor items, one example of a humor type that might be more meaningful to at least some women, show the reverse of the "typical" pattern. Thus, some reported sex differences in humor, especially those that suggest that women are deficient in humor appreciation, may be a function of the stimuli used.

The findings described above on sexist or exploitative vs. non-sexist or non-exploitative sexual stimuli support this conclusion. Another example of the possible misattribution of gender differences in humor research comes from the work of Leventhal and his associates (Leventhal & Cupchik, 1976; Leventhal & Safer, 1977). Leventhal proposes that response to humor is based on two types of processing, an 'objective' mode which is analytic and stimulus- or content-bound, and an 'emotional' mode which is holistic and context-based. Furthermore, he suggests that women rely more on the emotional mode, while men rely on the objective mode. For example, Caputo and Leventhal (cited in Leventhal & Cupchik, 1976) found that women rated items funnier with left-ear input, while men give higher ratings with right-ear input, a finding which fits the model since analytical processing is associated with the left hemisphere and holistic processing with the right hemisphere.

The latter finding is widely cited in the literature appearing even in the article on humor in the *Oxford Companion to the Mind* (Gregory, 1987). As described in that article, some authors (though not Leventhal) have suggested that the finding is evidence for a biological basis for sex differences in humor appreciation, in particular, and in information processing, in general. Despite the frequency with which this finding is cited and some rather extreme conclusions to which it has led, there are no reports that it has ever been replicated. Two recent replication attempts (Gallivan, 1991, 1994) failed. It is possible that the effect found in the original study was due to the nature of the humorous materials used. If those materials were more meaningful for men than women, then men may have been more likely to respond on the basis of the content, while women's judgements might have been more dependent on emotional tone or context, producing the lateralization effects. Failure to replicate the results in the latter two studies could have occurred because the more contemporary materials were less 'male-oriented'.

What does it mean to say that certain types of materials, forms of humor, or modes of processing are more meaningful to or preferred by one group or another? There are few studies that examine *why* certain items are found funnier than others or certain groups differ in their responses. Most psychology of humor studies rely on ratings of humorous stimuli and correlations of those ratings with personality traits or attitude measures or grouping variables to assess humor appreciation and its influences. Reliance on such methods, along with the problem of the particular sorts of materials used, has limited our knowledge of the psychology of humor, especially gender and humor. As Crawford (1988a) put it:

> If the problem with humor research were simply that it has incorporated ... gender bias, it could be remedied relatively easily through better use of experimental methods. But, although better experimental design is necessary and important, it must be accompanied by a broadening of methods and by 'triangulation' - converging on related questions with a variety of methods. Researchers...have also studied behavior out of context, and the consequence has been a limited understanding of the ordinary social functions of humor....The relationship of the research to the ordinary meanings and functions of humor in women's (and men's) lives remains unexamined. (p. 157)

How then should one study the relationship between gender and humor? Alternatives suggested by Crawford include structured and unstructured self-report and naturalistic and participant observation. One of her own studies (Crawford & Gressley, 1991) used questionnaire responses and written descriptions of "a person you know who has an excellent sense of humor" to investigate individuals' humor conceptions and preferences. Factor analyses of the questionnaire responses yielded ten important humor dimensions. Women and men did not differ on six of the factors, including ones assessing enjoyment of sexual and cartoon humor, willingness to tolerate being the target of humor, and creativity in humor production. Men showed a preference for hostile humor, jokes, and slapstick comedy, while women showed a preference for anecdotal humor. A content analysis of the participants' descriptions of a humorous person was consistent with the questionnaire data, but it also revealed an additional dimension, "caring", which included elements such as using humor to ease tension, anger or other negative emotions, or to help deal with difficult situations. Thus, this open-ended description approach allowed for the emergence of a dimension of humor use which is important to some people and which the initial questionnaire did not capture. Subsequently, in several factor analyses of subjects' responses to a humor questionnaire, Thorson and Powell (1993) also found that one of two strongest factors to emerge consisted of items related to what they called "coping or adaptive humor".

Kitzinger (1986) has expressed similar views about the need for methods which make the participants' constructions of reality the focus of investigation, rather than the *a priori* constructs of the researcher,. She suggests Q methodology (Brown, 1980, 1986; Stephenson, 1953) as one alternative. Q methodology is based on correlations between people, rather than correlations between tests or measures (R methodology). The viewpoints of different individuals are expressed through a common means, the Q sort, to enable comparisons across persons. The purpose is to make individuals' views (or constructions of reality) manifest for purposes of observation and study, much as Crawford and Gressley's (1991) description task allowed for evidence to emerge of an additional dimension of humor use that had not been anticipated in the statements comprising their questionnaire.

In a typical Q study, participants model their points of view by ranking a set of items; these could be statements of opinion, humorous stimuli, personality traits or whatever. This may sound like just another form of rating scale; however, items (or groups of items) are not assumed to assess particular constructs *a priori*. Rather, the dimensions of meaning expressed are revealed in the subsequent analysis. The Q sorts of different people are correlated; a high correlation indicates that two individuals sorted the items similarly, reflecting, it is assumed, a commonly held viewpoint. The complete correlation matrix for all respondents is factor analyzed to determine the different response patterns present. The individuals who 'load' on each factor are those who produced stimulus groupings which are similar to each other and different from those given by the people making up other factors. The factor scores for each statement in each factor are calculated, providing a factor array which is essentially a composite of the individual Q sorts making up that factor. Inspection of the factor arrays (by arranging the stimuli into the composite Q sort that each factor represents) and the significant differences between item scores on the different factors are used to distinguish and interpret the various perspectives that led to the Q sorts and the resulting factors.

Some readers unfamiliar with Q methodology may question the number of subjects usually included in a Q study, given the common standard in R methodological studies of a ratio of 5 to 10 subjects per variable. However, Arrindel and van der Ende (1985) report results which contradict the conventional wisdom on subject/variable ratios in factor analysis. They randomly sampled respondents from two large data sets and found that stable and recognizable factor solutions for both data sets emerged with subject/variable ratios of 1.3 to 1 and 3.9 to 1. Moreover, as Brown (1980) points out, "In Q-technique studies... the subjects have the status of variables rather than of sample elements: the term 'sample' refers to the set of items ... all that is required are enough subjects to establish the existence of a factor for purposes of comparing one factor with another." (pp. 191-192). Therefore, the greater concern in Q studies is with the number of sorting items and in this case, a fairly large set of statements concerning humor (79) was used. These statements were used in a Q-methodological study to explore, in detail, individuals' views of humor and their humor preferences.

METHOD

Participants

The participants in this study were 41 individuals (24 women and 17 men) 14 to 68 years of age (median = 30 years). The individuals varied widely in occupation and educational level. At the time of participating, five were public school students and five were students in college or university programs; the remainder reported educational attainment varying from the junior high school to university graduate degree level. Reported occupations varied widely as well; the sample included full-time homemakers, currently unemployed individuals and persons in clerical, labor, semi-professional and professional jobs. No information was collected on race/ethnicity of the participants. However, census information (Statistics Canada, 1994) indicates that over 90% of the population of Cape Breton County, where the study took place, are of European origin, Canadian-born and English-speaking. It is likely that the sample in this study reflected those demographics. Participants were recruited through personal contact or word of mouth by one of two female research assistants. They completed the sorting task individually, in their own homes or in a small room at the University College of Cape Breton.

Materials

A set of 79 statements about humor was selected from transcripts of peoples' descriptions of someone with an excellent sense of humor (Crawford & Gressley, 1991) and from questionnaires. These statements, and an identifying number for each, were typed on individual cards. The entire set of cards was shuffled each time it was given to a participant to sort.

Procedure

Participants were asked to read the statements and sort them on a scale from "strongly disagree/most unlike me" (-5) to "strongly agree/most like me" (+5). The midpoint of the scale (0) was labelled "neutral/not applicable/neither agree nor disagree". There was a restriction on the number of items permitted in each sorting category, to produce a quasi-normal distribution as follows:

-5	-4	-3	-2	-1	0	1	2	3	4	5
(4)	(6)	(7)	(8)	(9)	(11)	(9)	(8)	(7)	(6)	(4)

For the participants' reference, this distribution and the labels for the anchor points and the midpoint were typed on a banner placed on the table on which they laid the cards as they sorted them. Once they had completed the sorting task, they entered the number for each statement in the corresponding location on a template, or had the research assistant complete the template for them. Participants were also asked to complete a form indicating their sex, age, occupation and education.

RESULTS AND DISCUSSION

The data were analyzed using principal components factor analysis, varimax rotation. There were seven factors with eigenvalues greater than 1. The 4-factor solution (see Table 1) was chosen as the most appropriate since it provided well-defined factors with only one respondent left undefined. (The 3-factor solution left three individuals undefined, while the 5-factor solution left a respondent undefined and also produced a factor with only one defining Q sort.) The four-factor solution accounted for approximately 38% of the variance. Each of the factors was interpreted on the basis of its associated factor scores for the Q sort statements. Factor scores were calculated by merging the individual Q sorts of those individuals who defined each factor; the participants defining each factor were those with significant loadings on that factor and non-significant loadings on the other three factors.

Factor 1

As indicated in Table 1, seven participants (5 men and 2 women) defined Factor 1. In addition, 11 others (5 men and 6 women) loaded significantly on this factor, although they also had high loadings on other factors. Two facets of this particular perspective on humor stand out. First, this group of individuals was the only one of the four to admit to a high level of enjoyment of disparagement or 'putdown' humor. This was indicated by their ratings of the statements which follow (factor scores to the right of each statement for Factors 1, 2, 3, and 4, respectively).

16.	I am likely to enjoy a joke even if it makes fun of a racial or minority group.	5	0	-5	-4
68.	I appreciate a joke even if it is sexist (ridicules or downgrades women).	4	-3	-5	-3
77.	I have to admit I often enjoy sarcasm and biting wit.	4	1	-5	-3
79.	I hear a lot of ethnic jokes these days.	4	0	2	-1

The second important aspect of this humor perspective is that these individuals view themselves as very good at appreciating and 'performing' humor, as shown in their responses to the following statements:

TABLE 1 Factor Loadings for the Four-factor Solution

	Factors			
Q Sorter (Sex, age)	1	2	3	4
13 (M. 29)	**72**	04	-02	-08
3 (M. 16)	**65**	-13	-03	-13
10 (F. 24)	**58**	15	10	-14
22 (M. 18)	**52**	13	-12	14
20 (M. 31)	**52**	11	-07	09
4 (M. 29)	**49**	24	12	09
40 (F. 24)	**33**	17	18	27
37 (F. 46)	31	**69**	-18	-10
18 (F. 30)	07	**63**	-10	-12
11 (F. 27)	21	**59**	19	13
8 (F. 21)	07	**57**	11	15
7 (F. 21)	15	**54**	-16	29
39 (F. 54)	06	**49**	27	-23
35 (M.64)	-06	**45**	08	-26
26 (F. 37)	19	**45**	-02	-07
29 (M.41)	18	**31**	18	-05
24 (M.68)	04	-11	**70**	09
23 (M.64)	-01	04	**53**	-02
38 (F. 52)	-01	21	**48**	21
41 (M.38)	-06	25	**45**	27
28 (F. 41)	21	24	**30**	-28
30 (F. 39)	21	-08	14	**65**
33 (F. 55)	-06	-16	24	**48**
5 (F. 20)	09	-13	03	**45**
19 (M.30)	10	26	06	**31**
34 (F. 58)	07	22	19	**31**
1 (M.19)	61	-16	04	23
6 (F. 16)	37	30	-23	23
16 (F. 30)	46	15	36	20
17 (M.30)	54	28	33	-15
21 (M.15)	61	-44	15	18
27 (M.39)	39	33	23	-31
32 (F. 39)	47	33	23	16
9 (F. 24)	39	17	24	46
25 (F. 35)	14	36	01	46
12 (F. 27)	02	48	42	-05
36 (F. 32)	31	-48	-18	-10
14 (F. 14)	20	27	46	30
15 (F. 29)	37	-10	48	20
31 (M.39)	45	11	55	-25
2 (M.20)	22	13	26	07

Note. Loadings are rounded to two places and decimal points are omitted. Loadings exceeding +/-.30 are significant ($p < .01$). Loadings in bold indicate those which defined each factor..

12. I sometimes think I'm a little dense when it comes to understanding humor. -5 2 -2 -4
20. I tell funny stories about things that have happened to me or my friends and acquaintances. 5 2 0 2
29. I am quick to get a joke being told. 4 -1 1 0

Factor 2

The second factor was defined by nine individuals (7 women and 2 men). In addition, seven others (5 women and 2 men) had significant loadings on this factor, as well as some other(s). The most striking characteristic of this group was their belief that they are poor at appreciating and producing humor. Their ratings contrasted sharply with those of the first group on some of the statements referred to in the description of Factor 1 (12, 29) as well as on the following:

14. I make spontaneous or 'off the cuff' witty remarks. 0 -4 3 -1
21. I come up with quick one liners. 0 -5 5 0
26. I can always create a 'come back' line to a remark. 0 -5 4 1
31. I feel comfortable and at ease when telling a joke. 0 -3 1 0
36. I often tell jokes. 1 -5 0 2
73. I enjoy telling jokes. 3 -4 3 3

Overall, 10 of the 17 men who participated in this study had significant loadings on Factor 1, showing positive assessment of their own humor abilities. On the other hand, 12 of the 24 women had significant loadings on Factor 2, a factor defined almost exclusively by a negative self-assessment of competence at humor.

Factor 3

Factor 3 was defined by five people (3 men and 2 women), while seven others (2 men and 5 women) also had high loadings on this factor. This group differed significantly from both of the first two. In contrast with Factor 1, a critical component of the Factor 3 perspective involved a rejection of disparagement humor, as indicated by ratings of some statements listed previously (16, 68, 77), as well as others:

24. I tell jokes that never slight groups but are just about funny situations. -3 2 5 -2
45. I do a lot of kidding or teasing of other people. 2 -1 -4 1
56. I think very much about whether my listener might be offended by the joke I am about to tell. 1 1 4 -3

The second important element of this view contrasted with the Factor 2 orientation in that it involved a positive self-assessment of humor use shown in statements listed earlier (12, 14, 21, 26) and the following:

13. I can take a joke played on me as well as I can play jokes on others. 1 -1 5 -2

The five individuals who defined this factor were a disproportionate number of the older participants in the study.

Factor 4

The final factor was defined by five respondents (4 women and 1 man) and an additional five (3 women and 2 men) had high loadings on Factor 4. This group showed a tendency to reject disparagement humor, similar to the third group, and to be positive in their assessment of their own humor, similar to groups 1 and 3. However, this factor included a critical element not found in the others; people in this group indicated the importance of humor use as a means of coping with everyday situations. They attached an importance to these aspects that the other groups did not, as shown in their ratings of the following statements:

39. I always know when to break a tense mood with a joke. -1 -1 0 3
38. I enjoy using humor in everyday conversation. 2 1 0 5
41. I sometimes use humor to get other people's cooperation. -1 0 -3 2
47. I always seem to see the funny side of situations. 0 1 1 4
55. My sense of humor has been important in my life. 2 4 2 5

This group was also the only one to disagree with the statement,

63. I think you can't really learn to use humor - you either do it naturally or you don't. 1 3 2 -3

The results of this study indicate that use of humor in coping and in everyday life situations is an extremely important element of humor, at least for some people. This confirms the findings by Crawford and Gressley (1991) and Thorson and Powell (1993) which suggested that the caring or coping function is central to humor for many people. The results also suggest that the aggressive element in humor may be important only to a small minority of people, and that hostility, in fact, may have a negative effect on humor for some.

The results also showed a great deal of overlap between the views of women and men. There are both women and men who reject hostile humor and both women and men for whom everyday use of humor and humor as a coping mechanism are extremely important. Crawford and Gressley (1991) reported that women rated themselves lower on "sense of humor" than did men, supporting the idea that at least some men and women internalize generalized gender-linked views about humor performance. However, in this study, chi-square analyses of gender differences fell short of significance at the .05 alpha level.

The overall pattern of results of this study, which showed a high degree of similarity between the views of women and men, contrasts with frequently reported sex differences in appreciation of humor. This supports the view that such differences may reflect the nature of the materials and methods typically used in humor research rather than any global gender differences in humor appreciation.

REFERENCES

Arrindel, W. A., & van der Ende, J. (1985). An empirical test of the utility of the observations-to-variables ratio in factor and components analysis. *Applied Psychological Measurement, 9*, 165-178.

Brown, S. R. (1980). *Political subjectivity: Applications of Q methodology in political science*. New Haven, CT: Yale University Press.

Brown, S. R. (1986). Q technique and method: Principles and procedures. In W. D. Berry & M. S. Lewis-Beck (Eds.), *New tools for social scientists: Advances and applications in research methods* (pp. 57-76). Beverly Hills, CA: Sage.

Cantor, J. R. (1976) What is funny to whom? The role of gender. *Journal of Communication, 26*, 164-172.

Chapman, A. J., & Gadfield, N. J. (1976) Is sexual humor sexist? *Journal of Communication, 26*, 141-153.

Crawford, M. (1988a). Humor in conversational context: Beyond biases in the study of gender and humor. In R. K. Unger (Ed.), *Representations: Social constructions of gender* (pp. 155-166). Amityville, NY: Baywood.

Crawford, M. (1988b, August). *"You had to be there": Context and community in women's humor*. Paper presented at the meeting of the American Psychological Association, Atlanta.

Crawford, M. & Gressley, D. (1991). Creativity, caring, and context: Women's and men's accounts of humor preferences and practices. *Psychology of Women Quarterly, 15*, 217-231.

Deaux, K. (1984). From individual differences to social categories: Analysis of a decade's research on gender. *American Psychologist, 39*, 105-116.

Gallivan, J. (1991). Is there a sex difference in lateralization for processing of humorous materials? *Sex Roles, 24*, 525-530.

Gallivan, J. (1992). Group differences in appreciation of feminist humor. *Humor: International Journal of Humor Research, 5*, 369-374.

Gallivan, J. (1994, June). *Lateralization in humor appreciation: Sex differences vs.stimulus effects*. Paper presented at the annual meeting of the Canadian Psychological Association, Penticton, BC.

Gregory, R. L. (Ed.). (1987). *The Oxford companion to the mind*. Oxford: Oxford University Press.

Kimball, M. M. (1995). *Feminist visions of gender similarities and differences.* Binghamton, NY: Haworth.

Kitzinger, C. (1986). Introducing and developing Q as a feminist methodology: A study of accounts of lesbianism. In S. Wilkinson (Ed.), *Feminist social psychology: Developing theory and practice* (pp. 151-172). Milton Keynes, England and Philadelphia: Open University Press.

LaFave, L. (1972). Humor judgements as a function of reference groups and identification classes. In J. H. Goldstein & P. E. McGhee (Eds.), *The psychology of humor* (pp. 195-210). New York: Academic Press.

LaFave, L., Haddad, J., & Maesen, W. A. (1976). Superiority, enhanced self esteem, and perceived incongruity humor theory. In A. J. Chapman & H. C. Foot (Eds.), *Humor and laughter: Theory, research, and applications* (pp. 63-91). Sussex, England: John Wiley.

Leventhal, H., & Cupchik, G. (1976) A process model of humor judgement. *Journal of Communication, 26*, 190-204.

Leventhal, H., & Safer, M. A. (1977). Individual differences, personality and humour appreciation. In A. J. Chapman & H. C. Foot (Eds.), *It's a funny thing, humour* (pp. 335-349). New York: Pergamon.

Losco, J., & Epstein, S. (1975) Humor preference as a subtle measure of attitudes toward the same and the opposite sex. *Journal of Personality, 43*, 321-334.

Marlowe, L. (1984-85). A sense of humor. *Imagination, Cognition and Personality, 4*, 265-275.

Moore, T. E., Griffiths, K., & Payne, B. (1987) Gender, attitudes towards women, and the appreciation of sexist humor. *Sex Roles, 16*, 521-531.

Nias, D. K. B., & Wilson, G. D. (1977). Female responses to chauvinist humour. In A. J. Chapman & H. C. Foot (Eds.), *It's a funny thing, humour* (pp. 369-370). New York: Pergamon.

Statistics Canada. (1994). *Profile of census divisions and subdivisions in Nova Scotia - Part B: Cape Breton County.* (Catalogue No. 95-313). Ottawa: Author.

Stephenson, W. (1953). *The study of behavior: Q-technique and its methodology.* Chicago: University of Chicago Press.

Stillion, J. M., & White, H. (1987) Feminist humor: Who appreciates it and why? *Psychology of Women Quarterly, 11*, 219-232.

Thorson, J. A., & Powell, F. C. (1993). Development and validation of a multidimensional sense of humor scale. *Journal of Clinical Psychology, 49*, 13-23.

Author note: The research reported in this paper was supported by grant 410-90-0432 from the Social Sciences and Humanities Research Council of Canada. An earlier version of this paper was presented at the annual meeting of the Canadian Women's Studies Association, St. Catharines, Ontario, May, 1996. I am grateful to Steven Brown for his advice and assistance in the design and analysis of this study. I also wish to thank Mary Crawford, Judythe Isserlis and Marti Buffum for granting permission to use selections from their transcripts and questionnaires.

Preliminary Normative Data on the Depression-Happiness Scale for a Mildly Depressed Group

Christopher Alan Lewis
University of Ulster at Magee College
Northern Ireland

Stephen Joseph
University of Warwick
England

Mark Shevlin
University of Ulster at Magee College
Northern Ireland

100 students completed the Beck Depression Inventory and the Depression - Happiness Scale. A Beck Depression Inventory score of 10 was converted to a z score of .52. A z score of .52 applied to the Depression – Happiness Scale yielded a score of 42.45. Therefore a score of about 42 may be a reasonable cutoff score for mild but clinically relevant depression on the Depression- Happiness Scale. Data from 28 respondents who scored 10 or more on the Beck Depression Inventory were further examined. A mean score of 15 on the Beck Depression Inventory corresponded to a mean score of 38 on the Depression - Happiness Scale. These data provide some preliminary evidence for the clinical validity of the latter as a measure of depression.

The Depression - Happiness Scale (Joseph & Lewis, 1998) was originally developed for use in a survey with non-psychiatric populations. The Depression - Happiness Scale is a 25-item self-report scale on which respondents can score between 0 and 75, with higher scores indicating greater happiness and lower scores indicating greater depression (item-1 "I felt sad" (reversed scores), item-20. "I felt pleased with the way I am"). Generally, the scale possesses satisfactory internal reliability (Cammock, Joseph, & Lewis, 1994, 1998; Joseph, Lewis, & Olsen, 1996; Lewis & Joseph, 1995; Lewis, Joseph, & McCollam, 1996; McGreal & Joseph, 1993; Walsh, Joseph, & Lewis, 1995), ranging from 0.85, (Lewis, Lanigan, Joseph & de Fockert, 1997) to 0.93 (Joseph, Lewis & Olsen, 1996). The scale also has good convergent validity with various measures

---

Authors' info: Correspondence should be sent to Christopher A. Lewis, School of Psychology And Communication, U. of Ulster at Magee College, Londonderry, Northern Ireland, BT48 7JL.

North American Journal of Psychology, 1999, Vol. 1, No. 2, 319-322.

© NAJP

of subjective well-being. These measures include depression (Joseph & Lewis, 1998; Joseph, Lewis & Olsen, 1996; Lewis, Joseph & McCollam, 1996; McGreal & Joseph, 1993) happiness (Joseph & Lewis, 1998; Lewis & Joseph, 1995), locus of control (Cammock, Joseph, & Lewis, 1994), self-esteem (Cammock, Joseph, & Lewis, 1994), anxiety (Cammock, Joseph, & Lewis, 1994; Lewis, Joseph & McCollam, 1996), general health (Walsh, Joseph, & Lewis, 1995), and satisfaction with life (Lewis & Joseph, 1995; Lewis, Lanigan, Joseph & de Fockert, 1997), and the mean scores for non-psychiatric populations tend to be around 48 (e.g., Lewis & Joseph, 1998; Walsh, Joseph, & Lewis, 1995).

It has been suggested that it might be useful to have some indication of what score might be taken as a cut off point for clinically relevant depression – a score which would allow reanalysis of some previous data to formulate some normative clinical data on the Depression - Happiness Scale.

METHOD AND RESULTS

100 undergraduate respondents who participated in a previously published study (Joseph & Lewis, 1998, mean age = 24.8 years, SD = 7.1) had a mean score of 48.04 (SD = 10.75) on the Depression – Happiness Scale and a mean score of 6.96 (SD = 5.90) on the Beck Depression Inventory (Beck, Ward, Mendelson, Mock & Erbaugh, 1961). To estimate a cutoff point for clinically relevant depression a Beck Depression Inventory score of 10 was converted to a z score of .52. A z score of .52 applied to the Depression - Happiness Scale scores yielded 42.45. Thus a score of about 42 may be a reasonable cutoff score for mild but clinically relevant depression on the Depression - Happiness Scale.

To provide additional support for this score, a sub-sample of 28 (mean age = 24 years, SD = 4.42) who scored above 10 (mean = 14.68, SD = 5.01) on the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), indicating at least some depressive symptomatology had a mean score of 37.68 (SD = 10.07) on the Depression – Happiness Scale, which is below the suggested cut off point.

DISCUSSION

We would emphasise that these data are preliminary and further research must document normative data for severe clinical depression. Only one of our respondents scored as high as 33 on the Beck Depression Inventory. Such a score is normally associated with severe depression. This individual had a score of 22 on the Depression - Happiness Scale, suggesting that a score of around 22 or less might be taken as a cut off point indicative of severe depression. This suggestion awaits further empirical data on the incremental validity of the Depression - Happiness Scale with depressed groups. These preliminary data encourage exploration of the Depression - Happiness Scale as potentially suitable for the screening of clinically relevant depression as well as providing a measure of subjective well-being in non-psychiatric populations.

REFERENCES

Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry, 4*, 561-571.

Cammock, T., Joseph, S., & Lewis, C. A. (1994). Personality correlates of scores on the Depression - Happiness Scale. *Psychological Reports, 75*, 1649-1650.

Joseph, S., & Lewis, C. A. (1998). The Depression - Happiness Scale: Reliability and validity of a bipolar self-report scale. *Journal of Clinical Psychology, 54*, 537-544.

Joseph, S., Lewis, C. A., & Olsen, C. (1996). Convergent validity of the Depression - Happiness Scale with measures of depression. *Journal of Clinical Psychology, 52*, 551-554.

Joseph, S., & McCollam, P. (1993). A bipolar happiness and depression scale. *Journal of Genetic Psychology, 154*, 127-129.

Lewis, C. A., & Joseph, S. (1995). Convergent validity of the Depression - Happiness Scale with measures of happiness and satisfaction with life. *Psychological Reports, 76*, 876-878.

Lewis, C. A., & Joseph, S. (1998). The Depression - Happiness Scale: Reliability and validity of a bipolar self-report scale. *Journal of Clinical Psychology, 54*, 537-544.

Lewis, C. A., & Joseph, S. (1997). The Depression - Happiness Scale, a measure of a state or trait? Test - retest data over two years. *Psychological Reports, 81*, 1313-1314.

Lewis, C. A., Joseph, S., & McCollam, P. (1996). Convergent validity of the Depression - Happiness Scale with the Crown - Crisp Experiential Index. *Psychological Reports, 78*, 497-498.

Lewis, C.A., Lanigan, C., Joseph, S., & de Fockert, J. (1997). Religiosity and happiness: No evidence for an association among undergraduates. *Personality and Individual Differences, 22*, 119-121.

McGreal, R., & Joseph, S. (1993). The Depression - Happiness Scale. *Psychological Reports, 73*, 1279-1282.

Walsh, J., Joseph, S., & Lewis, C. A. (1995). Internal reliability and convergent validity of the Depression - Happiness Scale with the General Health Questionnaire in an employed adult sample. *Psychological Reports, 76,* 137-138.

End note: We would like to thank the many students who participated in the study and the anonymous reviewers and the editor for their helpful comments. .

IMPACT OF VOICE ON SOURCE CREDIBILITY IN ADVERTISING: A SELF-MONITORING APPROACH*

Claire Gélinas-Chebat
University of Québec at Montreal

Jean-Charles Chebat
Montreal School of Management

Research on voice has been neglected in advertising, although several phonetic studies point to the importance of voice in creating impressions about the source. A 2x2x2 factorial design experiment (N=221) used two linguistically similar advertising messages on financial services recorded by a professional actor using four types of voice (2 levels of voice intonation x 2 levels of voice intensity). The first dealt with an issue of high involvement (student loans), and the second of low involvement (ATM cards). Two regression analyses were used to test the effects of these two voice characteristics on two dimensions of credibility, internalization, and identification. The results show that intonation and intensity have asymmetrical effects on internalization and identification. Involvement mediates the effects of intensity on internalization. A self-monitoring approach is proposed to explain the results.

Whereas voice is a natural medium to carry emotionally and cognitively laden messages, its effects on advertising attitudes have been overlooked by researchers. Harris, Sturm, Klassen and Bechtold (1986) reviewed the advertising literature from a psycholinguistic perspective and found only one article (Coleman, 1983) which discussed the potential effects of phonological features on attitudes in advertising. They concluded that "phonological aspects have not been studied heavily in regard to advertising specifically" (p. 2) since no published paper has yet investigated the "potential for some important psycholinguistic work" on voice in advertising. They also pointed out that some phonological aspects of language deserve more attention in advertising research and suggested that advertising messages include tactics to convey particular

---

Author info: Correspondence should be sent to: Claire Gelinas-Chebat, Dept. of Linguistics, U. of Quebec at Montreal, Canada H3V 4P1. E-mail address: gelinas-chebat.claire@uqam.ca

North American Journal of Psychology, 1999, Vol. 1, No. 2, 323-342.

©NAJP

impressions about the speaker or the product. They stressed that a speaker talking "like a real plumber" should be a credible source in an advertisement for a plumbing product. However, they did not describe the characteristics of a plumber's voice for the appropriate target audience.

None of the four basic advertising models identified by Lutz, MacKenzie and Belch (1983) leaves any room for voice characteristics. Even more striking is the total absence of reference to voice in Petty, Cacioppo and Schumann (1984). In their article on the implications of ELM for salesmen, they noted that voice is a potentially fruitful research area, since it is really the salesman's main vehicle for communication and persuasion. Nevertheless, voice is not used as a variable in any of the Petty and Cacioppo empirical studies on ELM. A study by Peterson, Cannito and Brown (1995) shows that two major voice characteristics are related to salespersons' commercial performance, i.e., successful salespersons speak faster and with more pronounced falling intonation contour, i.e. the pitch-melody of the voice. These results demonstrate the wide gap between empirical research and theoretical developments in both advertising and salesmanship models.

The effects of voice in advertising have been reported in passing by Anand and Sternthal (1990). Their pilot study assessed the impact of message presentations on the ease of processing an advertising message. In this study, the message was "read dramatically" or "sung to a piano accompaniment." Even if it did not explicitly consider voice characteristics as a variable, the findings showed that melody of the voice, intonation, affected the perception of the ad. The "sung message" had a marked intonation and was more difficult to understand, more likeable, and seemed more novel than the "read message" which had a less marked intonation (p. 348).

A marketing study by Wilson and Sherrell (1993) alluded to the usefulness of studying voice in advertising. Their meta-analysis of 114 studies on source credibility demonstrated the impact of the oral media used in persuasion and tended to confirm that persuasion processes through voice needed special attention:

> ...persuasion effects in studies using *oral* communication from the source were larger, on average, compared to effects when other forms of message media were used... The average ranking of effects in studies using *oral* communication was significantly greater than the average ranking of effects in studies using a combination of media vehicles (for example, print advertisements and an oral message together (p. 106, our emphasis).

EST COPY AVAILABLE

Voice, Self-Monitoring and the Internalization-Identification Dichotomy

An interesting approach was offered by Higgins and his colleagues (Higgins, 1981; McCann & Higgins, 1984, 1988; Higgins & McCann, 1984; Higgins, Fondacaro & McCann, 1981), who developed the "communication game" model. This model, derived from self-monitoring theory (Snyder, 1974, 1979, 1987), can contribute to understanding the effects of the source's speaking style on the receivers' attitudes. As summarized by McCann and Higgins (1990, p.18):

> One rule of the communication game is that speakers should modify or tune their messages to suit the characteristics of the audience. McCann and Hancock (1983) examined the implications of individual differences in personal goal orientation by having low and high self-monitors communicate about a stimulus person. The results indicated that it was only the high self-monitors who modified their messages to suit the attitudinal characteristics of their audience. High self-monitors are particularly concerned with face goals (Snyder, 1979) and tend to use contextual cues (e.g., recipients' attitudes) to guide their ongoing behavior. Low self-monitors, on the other hand, are concerned with their own attitudes and beliefs. Thus, differences in personal goal orientations were found to influence communicative activity through their impact on rule following behavior.

Snyder (1974, 1987) developed the Self-Monitoring Scale (SMS), which measures an individual's ability to observe others and then regulate and control his/her own behavior in social interactions. The SMS has been used in a number of different social settings. It was found that high self-monitors are more "socially skilled" in terms of perceptual sensitivity and behavioral flexibility (Furnham & Capon, 1983), particularly in terms of sexual relations (Snyder, Simpson & Gangestad, 1986) and dating relationships (Snyder, Berscheld & Glick, 1985; Snyder & Simpson, 1986). Here, high self-monitors were shown to pay greater attention to and place greater weight on exterior physical appearance. Even in more cognitively elaborate social situations, such as personnel selection for companies, high self-monitoring individuals placed greater weight on information about physical appearance than did low self-monitoring individuals. By contrast, low self-monitoring individuals put greater weight on information about personal dispositions than high self-monitoring individuals (Snyder, Berscheid & Matwychuk, 1988).

It was also shown that high self-monitors differ in using information contained in advertisements. They responded more favorably to the advertised product that showed more attractive appearance, judging it to be of higher quality, whereas low self-monitors assigned higher quality ratings to the less attractive product (DeBono & Snyder, 1989). Similarly, high self-monitors were more favorable toward the image-oriented advertisements, while low self-monitors favored the quality-informational oriented advertisements (Lennon, Davis & Fairhurst, 1988; DeBono & Packer, 1991). In addition, high self-monitors were willing to pay more for products if they were advertised with an image orientation, and were more willing to try a product if it was marketed with an image appeal (Snyder & DeBono, 1985). They also used the physical attractiveness of the source to process the message arguments (DeBono & Telesca, 1990).

However, these advertising studies using a self-monitoring approach focus on the *receiver* side of the communication process, whereas our study deals with the *source* characteristics, in particular their phonetic characteristics. The phonetics literature shows that speech patterns with which groups mark and maintain social identity enhance two opposite perceptions of the source: either a positive impression (especially in terms of attractiveness) based on similarities (Burgoon & Miller, 1985; Putman & Street, 1984) or a negative impression of an outgroup speaker based on differences (Giles & Ryan, 1982). Self-monitoring communicative behavior of the source is thought to be one key variable of communication style used in persuasion.

It is argued that the self-monitoring dichotomy (high and low) is the communicational parallel of Kelman's (1961) psycho-social dichotomy, i.e., the identification and internalization dichotomy. Kelman described three persuasion processes: compliance, internalization and identification. Two of these processes are relevant to advertising (it is widely accepted that compliance[1] is not directly relevant in advertising). On one hand, internalization is based on acceptance of messages regarded as valid and truthful, if the source is considered competent, expert and trustworthy.

On the other hand, identification is based on source attractiveness, i.e., either the source physical attractiveness or the similarity of values between the source and the receiver. Kelman maintained that recipients will pay attention to and respond to a communication because of either internalization or identification. These processes are not orthogonal, and they usually are studied separately.

The meta-analysis on the effects of source credibility by Wilson and Sherrell (1993) used Kelman's dichotomy (i.e., internalization and identification) to classify the results of 114 studies. They found that "expertise as a source manipulation tends to have a stronger effect on persuasion than other types of source manipulations" (p. 109).

We propose the following relation between Kelman's and the self-monitoring dichotomies. On one hand, high self-monitors enhance their communication characteristics in order to make them more similar to their audience, and they expect high similarity to increase acceptance of the message by the receivers. On the other hand, low self-monitors stick to their own personal attitudes and opinions and play a different strategy in order to enhance their credibility. They do not compromise on the audience's characteristics and expectations, and they may be perceived as more "honest" and "trustworthy" precisely because they do not modify their attitudes and behavior.

One key purpose of the current study is to understand if and which one of selected phonetic variables (or a combination of these variables) impacts on the monitoring strategies, i.e., leads to perceptions of the source as similar, honest and trustworthy (or the opposite). The process through which phonetic cues are transformed into information about the speaker is basically attributional. The fact that the speaker uses high self-monitoring strategies can be interpreted by the recipients either as a genuine characteristic of in-group membership, or as a tactic to convince them that the speaker (or those who mandated him/her to give the persuasive speech) is biased.

Harris *et al.* (1986) gave an example of a high self-monitor who spoke "like a lumberman" (in terms of vocabulary and accent) before an audience of lumbermen. This source may have been perceived either as "one of the gang" or as a shrewd communicator who used these techniques in order to persuade them. Conversely, a low self-monitor, who does not use linguistic markers characteristic of the recipient group, may either reduce the level of identification with the recipients or enhance his/her perceived honesty and trustworthiness. For instance, a physician who speaks "like a physician" before a public of lumbermen can be perceived as a socially distant individual, but the low self-monitoring physician may also be perceived as an authentic expert who refuses to compromise his/her identity. Thus, findings from the phonetics literature are very relevant to this internalization-identification dichotomy.

Relevant Studies in Phonetics

Effects of Voice on Identification Variables. Vocal likeability is an indicator of facial attractiveness (Zuckerman, Larrance, Spiegel & Klorman, 1981). Pittam and Gallois (1987) showed that some phonetic variables are associated with the source's status, occupation, level of education, and degree of influence. They found that a breathy voice is associated with sexuality; whispering with confidentiality; creakiness with dominance and high social status; and tenseness with coldness and distance.

A powerless speaking style (first described by Lakoff, 1973) is associated with social power and status. It is characterized by the frequent use of intensifiers, hedges, hesitations, questioning forms and more frequent rising intonations (Erikson *et al*, 1978). Powerful speakers (described by Fowler *et al*., 1979) tend to control the conversational content and talking turn, and are perceived as more credible and more attractive than their powerless counterparts (Erikson *et al* 1978). Lind and O'Barr (1979) found that, in a simulated court-room experiment, powerful witnesses are regarded as more socially attractive and dynamic.

Loud-speaking individuals are perceived as more aggressive and dominant (Scherer, 1979), but also, paradoxically, as lacking self-assurance (Page & Balloun, 1978). Chaiken (1979) reported that attractive communicators induced greater persuasion.

It can be concluded that intonation and intensity play opposite roles in creating impressions of power: marked intonation enhances the impression of powerlessness whereas high intensity enhances powerfulness.

Effects of Voice on Internalization Variables. In their simulated court-room experiment Lind & O'Barr (1979) also found that powerful witnesses were regarded as more trustworthy and convincing. Brooke & Ng (1986) showed that intonation (along with polite forms and intensifiers) were characteristic of low influence in small conversational groups. Rising intonation caused the speakers to be perceived as not sure of themselves, and, with a flat or dropping intonation, the speaker was tacitly perceived as demanding agreement from others. This behavior was seen as a positive feature. Even more convincingly, persuasive salespersons were shown to be faster speakers and to use less variability in their voice fundamental frequency (Peterson, Cannito & Brown, 1995). Here again, intonation and intensity seem to be playing opposite roles: rising intonation negatively impacts on persuasiveness, whereas high intensity impacts positively.

Hypotheses

The hypotheses are derived from this literature review. Voice intonation and intensity were selected as two key variables. These two phonetic characteristics have been reported most extensively in the phonetics literature and they allow us to compare our findings with those of previous studies.

Main Effects of Voice Intensity and Intonation

Effects of Voice Intensity:

H1.1: High voice intensity significantly enhances identification

H1.2: High voice intensity significantly enhances internalization

Effects of Voice Intonation:

H2.1: Marked voice intonation significantly reduces identification

H2.2: Marked voice intonation significantly reduces internalization

No interactive effect of intonation and intensity can be predicted from the literature, since the usual methodological approach in phonetics is not to employ a factorial design.

Interactive Effects of Involvement and Voice Characteristics

The Wilson-Sherrell meta-analysis pointed out the differential *effects* of credibility under low and high issue-involvement, and it found general support for the Elaboration Likelihood Model (ELM.):

> In eight of the 12 studies, the ELM hypothesis was supported; that is, characteristics of the message source have a significant impact on attitude change only in the low involvement condition. (Wilson & Sherrell, 1993, p.108).

While our study focuses on the *antecedents* of credibility (and not on its effects), issue-involvement has been included in the research design. It was reasoned that voice cues could be more salient under low involvement, i.e., when consumers are taking the "peripheral route" to persuasion. Under high involvement, it is hypothesized that consumers pay less attention to executional cues such as voice, since in the "central route" they are focusing on message arguments. The following reasoning is based on the ELM.

Under high involvement, receivers are more likely to process information and message arguments than under low involvement. The successful communication strategy consists mainly of inducing internalization of the arguments. Low self-monitoring is the communicational implementation of the internalization strategy: the characteristics of the source are obliterated by the message because the receiver's cognitive energies focus on the arguments. In terms of voice characteristics, low intonation and low intensity serve this strategy.

Conversely, under low involvement, the receiver's cognitive energies are limited as well as his/her interest in the message. Receivers use heuristics to develop attitudes toward the advertised product or service in order to avoid an in-depth analysis of the message, which would be too costly. The communication strategy which enhances the receivers' attitudes is mainly based on identification. This strategy requires a high self-monitoring source who strives to display characteristics which make him/her similar or attractive to the receivers. In terms of voice characteristics, both high intonation and high intensity can play that function.

Combined Effects of Voice Intensity and Involvement

H3.1.a: The lower the involvement, the stronger the effects of voice intensity on identification

H3.1.b: The lower the involvement, the stronger the effects of voice intensity on internalization .

Combined Effects of Voice Intonation and Involvement

H3.2.a: The lower the involvement, the stronger the effects of voice intonation on identification .

H3.2.b: The lower the involvement, the stronger the effects of voice intonation on internalization.

METHODOLOGY

Overview of the Methodological Approach

An experiment was designed with two levels of issue-involvement, voice intensity and voice intonation. In each of the 2x2x2 experimental conditions, participants were presented with an advertising message recorded on tape and designed for radio. A professional actor modified his voice to read the message so that the voice was either of low or high intensity, and either of low and high intonation. The two advertising messages on financial services were attributed to the same bank (a fictitious name was used), and they were either about low or high personal involvement services (use of ATM or student loans).

Participants

Two hundred seventy-nine university students in different sections of the same business administration course during the same semester were randomly assigned to the four experimental conditions: 135 were assigned to the low-involvement message condition and 144 were assigned to the high-involvement message condition. Only 221 questionnaires were fully completed. Each cell of the factorial research design contained an average of 27.6 participants.

Procedure

A good quality radio-cassette player was used to play the appropriate message execution for the participants in order to simulate as closely as possible a radio advertisement. Each of the eight experimental groups was exposed to only one message. In all groups, the objective intensity (i.e., the volume) was maintained at a constant and comfortable level.

Once exposed to the experimental ad, participants were asked to complete a questionnaire on the dependent variables, as described below.

The concept of credibility was operationalized using eight 7-point scales. They formed two sets of four scales, one for "internalization,"[2] the other for "identification."[3] The eight credibility variables were factor-analyzed, and two factors had eigenvalues greater than 1.0. The first factor explained more than three times as much variance as the second one (53% compared with 13%). The respective eigenvalues were 4.4 and 1.2. Internalization variables loaded on the first factor while the identification variables loaded on the second factor. The respective Cronbach's alphas were high: .81 for internalization and .85 for identification.

Two message conditions, one for low-involvement and one for the high-involvement experimental condition were designed. In both situations, the messages contained the same number of arguments (i.e., 4). The arguments were similar to those used by real promotional brochures of local banks. In the low-involvement message, participants were invited to come to a branch of a certain bank (a fictitious name was used) to pick up their automatic teller machine (ATM) cards. In the high-involvement message, the participants were also invited to come to a branch of the same bank to inquire about loans specifically designed for students. It was assumed that a student loan was much more important than an ATM card. This was confirmed by the manipulation check.

The two messages for the low- and high-involvement services were as similar as possible from a linguistic point of view[4] and lasted approximately the same time (minimal duration: 55 seconds, maximal duration: 62 seconds).

A professional male actor was directed to produce four different voices for each of the two (low- and high-involvement) advertising messages. The actor was asked to speak *loud* or *low* (manipulation of intensity) and to speak *with* or *without* intonation (manipulation of intonation) according to the experimental design.

A professional technician of the University audiovisual services was instructed to stabilize the VU-meter level within the zero zone in order to keep a constant and comfortable recorded voice intensity.

Five different versions of each message were taped in a professional recording studio. In addition to the four experimental conditions, a fifth version was also recorded with natural intensity and a neutral-voice intonation. Each of these five versions was recorded twice to make sure that at least one of the two versions was satisfactory.

In a pre-test, 20 students in phonetics served as judges to select the experimental recordings. They were exposed to 20 different versions of the messages: eight (for high and low intonation, high and low voice intensity, and high and low involvement) messages, which were recorded twice (i.e., in two different takes); two neutral intonation and intensity versions for the low-involvement message; and two neutral intonation and intensity versions for the high-involvement message. In all cases, the volume level was maintained at a constant and comfortable level. Judges rated the 20 recordings on a phonetics scale of 1 to 10 to measure perceived intonation and intensity. Eight takes were selected, the intonation and intensity of which were either the lowest or the highest; in particular, the eight selected takes were rated significantly lower or higher than the neutral voice.

Objective acoustical measures were performed to confirm each experimental condition. The involvement variable was validated by using Zaichkowski's (1985) Personal Involvement Inventory (PII). The high- and low-involvement conditions were controlled in the following way. Each of the two groups was exposed either to the high or the low-involvement message. One group (N=135) listened to an advertising message on automated teller machines (ATM), and the other group (N=144) listened to an advertisement on a program of student loans. The first group scored significantly lower in terms of issue involvement than the second one (-1.75-vs-1.85 in terms of factor scores); a t test of differences between the two groups in terms of PII was very significant, t (221)=-4.09, $p<.0001$).

RESULTS

Two linear regression analyses were performed: one with "internalization" and the other with "identification" as the dependent variable. In order to test the hypotheses, the independent variables were the two experimental variables (voice intonation and intensity) and the Personal Involvement Index (PII) score for each respondent. The interactions between the variables were assessed by the products of these variables two by two.

Results of the Regression Analysis on Internalization

Table 1 shows the results of this regression. Both voice characteristics have a significant impact on internalization: the respective betas for intensity and intonation are -.21 ($p=.03$) and -.15 ($p=.08$). These results support hypothesis H2.2 (related to intonation), but provide only partial support to H1.2 (related to intensity, where a positive relation was

TABLE 1 Regression Analysis on Internalization

Multiple R .455
R Square .21
Adjusted R Square .19
Standard Error 3.07

Analysis of Variance

	df	Sum of Squares	Mean Square
Regression	5	677.47	135.49
Residual	276	2601.09	9.42

$F = 14.38$ $p < .0001$

Variables in the Equation

Variable	*B*	Beta	*T*	Signif. Level
Intonation	-.959	-.12	-1.70	.09
Intensity	-1.44	-.19	-2.37	.02
Involvement	1.77	.51	7.51	.0001
Inten x Inton	2.02	.23	2.4	.02
Inten x Involve	-1.03	-.20	-2.87	.004
Constant	12.97		34.58	.0001

Note: No other variables entered the equation.

predicted). A significant interaction was found between intensity and involvement (beta=-.20; $p<.04$), which supports hypothesis H3.1.b. This interaction is shown in Table 1. The effects of intensity on internalization are more significant under high- (F [1,118]= 3.94, $p<.05$) than under low-involvement (F [1,104]=1.34, $p>.05$), whereas the opposite was predicted by H3.1.b (based on the ELM). Low intensity triggers higher scores under high-involvement than under low-involvement (F [1,107]=20.02, $p<.0001$). High intensity is almost equally efficient under high and low involvement, F (1,115) = .43, $p > .05$).

No significant interaction was found between intonation and involvement, which fails to support H3.2.b. However, a non-predicted interaction was found between intonation and intensity (beta=.27, $p=.02$). This interaction is shown in Table 2. The two voice characteristics interact very significantly on internalization, F (1,221) = 10.46, $p < .001$. The two extreme voice combinations (*either* low intensity/low intonation *or* high intensity/high intonation) enhance internalization, and the respective mean scores were 4.46 and 4.28, F (1,121) = .75, $p > .05$). The two in-between combinations were equally inefficient in terms of their impact on internalization, F (1,101) = .40; $p > .05$.

BEST COPY AVAILABLE

Results of the Regression Analysis on Identification

The results in Table 2 show that two variables entered the regression equation: involvement and intonation. Whereas involvement enhances identification (beta=.37, p<.0001), marked intonation has negative effects on identification (beta=-.12; p<.05). Thus, H2.1 is supported.

A significant interaction was found between intensity and involvement (beta=-.13, p<.05). Intensity affects identification in both high-involvement (F [1,118] =11.02, p<.0001) and low-involvement conditions (F [1,104] =7.86; p<.006), whereas H3.1.a predicted (based on the ELM) that the effects of intensity would be significantly stronger under low- than under high-involvement. The interactive effects are shown in Table 2. The effects of low intensity are much stronger under high- than under low-involvement, F (1,102)=18.72, p<.0001. Conversely, high intensity triggers higher scores under low- than under high-involvement, F (1,115)=.4.08, p<.05.

Also not supported are H3.2, which predicted an interaction between intonation and involvement (beta=-.11; p=.15), and H1.1, which predicted significant main effects of intensity (beta=-.04, p=.39).

DISCUSSION

So far, very few studies in phonetics have considered the interactive effects of two (or more) voice characteristics in a systematic factorial research design.[5] Compared with the phonetics studies that tend to be descriptive and hypothesis-free, our study shows how fruitful the experimental approach can be. First, the findings indicate that two voice characteristics, intonation and intensity, interact in specific ways to affect credibility (these findings are discussed in the next paragraphs). Second, it was found that the two voice characteristics have *asymmetrical* effects on credibility. For example, intonation has a main effect on identification, which is not true for intensity. Conversely, the interactive effects of intensity and involvement were significant on both constructs, which was not true for intonation.

Another contribution of this study is to point out the mediating effects of involvement. Whereas studies in phonetics have not considered these mediating effects, our findings show that the effects of voice intensity on internalization are significantly mediated by involvement, which could not be predicted from the phonetics literature. Although the central component of the ELM is confirmed here, that is the mediation of involvement, our results cannot be explained by this model. On one hand, the effects of intensity on internalization are stronger under high involvement than under low involvement. On the other hand, the effects

TABLE 2 Regression Analysis on Identification

Multiple *R*	.34
R Square	.11
Adjusted *R* Square	.11
Standard Error	3.41

Analysis of Variance

	Df	Sum of Squares	Mean Square
Regression	3	430.89	143.63
Residual	278	3248.09	11.68

$F = 12.29$ $p < .0001$

Variables in the equation

Variable	*B*	Beta	T	Signif.Level
Intonation	-1.00	-.12	-2.16	.03
Involvement	1.37	.37	5.34	.0001
Inten x Involve	-.82	-.14	-1.94	.15
Constant	15.28		48.70	.0001

Note: No other variables entered the equation.

of intensity on identification are significant under both high and low involvements. The intensity by involvement interaction on internalization may be explained by two processes. The first one is the information processing scheme (e.g., Celsi & Olson, 1988; Gardner, Mitchell & Russo, 1985; Greenwald & Leavitt, 1984; MacInnis & Jaworski, 1989; Mick, 1992). Under high involvement, high voice intensity may play a distracting role, precisely because it is in competition with the message arguments. Low intensity generates higher internalization scores because the receivers may allocate more cognitive resources to processing these arguments. The second one is the attribution process. When exposed to a low intensity voice, receivers are more likely to process the message without being pressured by the source. Consequently, they internalize it. This process has been documented by Dholakia and Sternthal (1977), who found that the higher the source credibility, the less the message acceptance can be attributed to internal causes (such as their dispositions and opinions). It is suggested that, under high involvement, low voice intensity allows the consumers to allocate more attention to the arguments and to have less pressure put on them. The low intensity voice is typical of the low self-monitoring strategy of sources that count mainly on their arguments for changing attitudes (as long as the receivers are cognitively active, i.e., under high involvement).

Intensity and involvement also interact on identification. Low intensity generates higher scores of identification under high involvement than under low involvement. This pattern is similar to that shown for internalization. However, high intensity enhances identification under low involvement. The following explanation is suggested. Under high involvement, low self-monitoring strategies are preferred because the cognitive processes are more salient. However, under low involvement, a high self-monitoring source, which tries to reach out to the audience and to show that it is similar to them, is compatible with the low cognitive activity. In that case, the receivers assess the source through external cues that contribute to the execution of the message.

Our results on the main effects of intonation confirm those obtained in phonetics. Low intonation enhances both credibility constructs. Since we used an experimental design, our study sheds some light on a combination of voice characteristics. The results show that the two extreme combinations of voice characteristics enhance internalization. The interpretation of these results is as follows. The high-intonation and high intensity voice is what Léon (1970) calls *an advertising voice*. This type of "expressive voice" has been shown by Hall (1980) to be more persuasive. As pointed out by Street (1990), this is perceived by recipients to be a "powerful" speaking style:

> Loud and higher pitched speech stimulates arousal more than does soft voice and low-pitched speech and likely draws substantial attention toward the speaker (p. 133).

This type of voice is common in advertising strategies: it aims at attracting attention with high intensity and offering a music-like voice through pitch variations (i.e., high intonation). Holbrook and Hirshman (1982) suggested that successful ads contain an entertaining aspect.

As for the low-low combination, three complementary explanations are provided. First Léon (1970) has described this low intensity-low intonation voice pattern as cues of thoughtfulness. It is argued that this type of voice is attributed to the stereotyped "cold calculating individual," likely that of a financier. This explanation fits with the financial messages used in the experiment. In other words, this type of voice is consistent with Harris' *et al.* (1986) contention that an advertising message should be carried by a voice which fits the product (e.g., their example of a "plumber's voice" for Drano). These phonetic traits enhance the source's perceived *competence* and *expertness*, which relate to internalization.

A second explanation for the effects of the low-low combination is as follows: since participants were expecting an advertising voice (that is a "high-high" voice), the voice characterized by the opposite traits would *disconfirm* their expectations. According to attribution theory (e.g., Kelley, 1967), this could be a credibility cue, and, in particular, such a disconfirming voice would enhance *trustworthiness*, also related to internalization.

Thirdly, according to self-monitoring theory, the low-low combination is the vocal expression of low-monitoring behavior. The speaker is not reaching out to the audience; his voice is reflecting the strength of his arguments and s/he expects to persuade without using artificial tactics based on executional cues. The high-high voice combination illustrates the high self-monitoring behavior, since the speaker is using more physical energy and seduction to persuade the audience. Both low and high self-monitoring strategies are equally efficient.

However, any intermediary strategy consisting of high voice intensity and low voice intonation (or low intensity and high intonation) would not enhance the speaker's credibility. These in-between strategies reveal speakers who have something to gain from their speech or who do not believe in what they say.

It is interesting to note that these conclusions are consistent with findings of phoneticians. Ekman (1988) has shown that the high intonation-low intensity voice is perceived as that of a liar. Léon (1970) has shown that the low intonation-high intensity voice is perceived as that of an irritated individual.

Our results show that voice deserves more attention from researchers in advertising. The effects of voice on persuasion are more subtle than what were expected based on findings in phonetics. Voice characteristics interact significantly with each other and with involvement. Their effects on internalization can be regarded as strong, while their effects on identification are average, according to Cohen's (1978) statistical power analysis. Future studies on credibility of television or radio advertising should not ignore the voice dimension and should include involvement as a mediator of voice effects.

REFERENCES

Anand, P., & Sternthal, B. (1990). Ease of message processing as a moderator of repetition effects in advertising. *Journal of Marketing Research, 27,* 345-353.

Bourhis, R.Y. (1983). Language attitudes and self-report of French-English usage in Quebec. *Journal of Multilingual and Multicultural Development, 4,* 163-179.

Brooke, M. E., & Ng, S. H. (1986). Language and social influence in small conversation groups. *Journal of Language and Social Psychology ,5* , 201-210.

Burgoon, M., & Miller, G.R. (1985). An expectancy interpretation of language and persuasion. In H. Giles & R.N. St. Clair (Eds.), *Recent advances in language, communication and social psychology* (pp. 199-229). London: Erlbaum..

Celsi, R. L., & Olson, J. C. (1988). The role of involvement in attention and comprehension processes. *Journal of Consumer Research, 15,* 210-224.

Chaiken, S. (1979). Communicator physical attractiveness and persuasion. *Journal of Personality and Social Psychology 37,* 1387-1397.

Cohen, J. (1973). Statistical power analysis of research results. *American Educational Research Journal, 10,* 225-229.

Coleman, L. (1983). Semantic and prosodic manipulation in advertising. In R. J. Harris (Ed.) *Information processing research in advertising.* Hillsdale, NJ: Lawrence Erlbaum.

DeBono, K.G., & Packer, M. (1991). The effects of advertising appeal on perceptions of product quality. *Personality and Social Psychology Bulletin, 17,* 194-200.

DeBono, K.G., & Snyder, M. (1989). Understanding consumer decision-making processes: The role of form and function in product evaluation. *Journal of Personality and Social Psychology, 19,* 416-424.

DeBono, K.G., & Telesca, C. (1990). The influence of source physical attractiveness on advertising effectiveness: A functional perspective. *Journal of Applied Social Psychology, 20,* 1383-1395.

Dholakia, R. R., & Sternthal, B. (1977). Highly credible sources: Persuasive liabilities? *Journal of Consumer Research, 3,* 223-232.

Ekman, P. (1988). Lying and nonverbal behavior: Theoretical issues and new findings. *Journal of Nonverbal Behavior, 12,* 163-175.

Erickson, B., Lind, E., Johnson, B. C., & O'Barr, W. M. (1978). Speech style and impression formation in a court setting. *Journal of Experimental Social Psychology, 14,* 266-279.

Fowler, R., Hodge, B., Kress, G., & Trew, T. (1979). *Language and control.* London: Routledge and Kegan Paul.

Furnham, A.F., & Capon, M. (1983). Social skills and self-monitoring processes. *Personality and Individual Differences, 4,* 171-178.

Gardner, M. P., Mitchell, A. A., & Russo, J. E. (1985). Low involvement strategies for processing advertisements. *Journal of Advertising, 14,* 4-12.

BEST COPY AVAILABLE

Giles, H., & Ryan, E.B. (1982). Prolegomena for developing a social theory of language attitudes. In E.B. Ryan and H. Giles (Eds.), *Attitudes toward language variation: Social and applied contexts* (pp. 208-223). London: Arnold.

Giles, H., & Smith, P.M. (1979). Accommodation theory: Optimal levels of convergence. In H. Giles & R. St. Clair (Eds.). *Language and social psychology* (pp. 45-65). Oxford: Blackwell.

Greenwald, A.G., & Leavitt, C. (1984). Audience involvement in advertising: Four levels. *Journal of Consumer Research, 11*, 581-592.

Gunning, R. (1952). *The technique of clear writing*. New York: McGraw-Hill.

Halberstadt, A. G. (1983). Family expressiveness styles and nonverbal communication skills. *Journal of Nonverbal Behavior, 8*, 14-26.

Hall, J. A. (1980). Voice tone and persuasion. *Journal of Personality and Social Psychology, 38*, 924-934.

Harris, R. J., Sturm, R. E., Klassen, M. L., & Bechtold, J. I. (1986). Language and advertising: A psycholinguistic approach. *Current Issues and Research in Advertising*, 1-27.

Higgins, E.T. (1981). The communication game: Implications for social cognition and persuasion. In E.T. Higgins, C.P. Herma & M.P. Anna, (Eds.). *Social cognition: The Ontario Symposium*, (pp. 343-392). Hillsdale, NJ: Erlbaum.

Higgins, E.T., Fondocaro, R.A., & McCann, C.D. (1981). Rules and roles: The communication game and speaker-listener processes. In W.P. Dickson (Ed.). *Children's oral communication skills* (pp. 289-312). New York: Academic Press.

Higgins, E.T., & McCann, C.D. (1984). Social encoding and subsequent attitudes, impressions and memory: Context-driven and motivational aspects of processing. *Journal of Personality and Social Psychology, 47*, 26-39.

Holbrook, M.B., & Hirshman, E.C. (1982). The experimental aspects of consumption: Consumer fantasies, feelings and fun. *Journal of Consumer Research, 9*, 132-140.

Kelley, H. (1967). *Causal schemata and the attribution process*. Morristown, NJ: General Learning Press.

Kelman, H. C. (1961). Process of opinion change. *Public Opinion Quarterly, 25*, 57-78.

Lakoff, R. (1973). Language and woman's place. *Language in Society, 2*, 45-80.

Laver, J. (1968). Voice quality and indexical information. *British Journal for Disorders of Communication, 3*, 43-54.

Lennon, S., Davis, L.L., & Fairhurst, A. (1988). Evaluations of apparel advertising as a function of self-monitoring. *Perceptual and Motor Skills, 66*, 987-996.

Léon, P. (1976). De l'analyse psychologique à la catégorisation auditive et acoustique des emotions de la parole. *Journal de Psychologie, 3-4*, 305-324.

Lind, E.A., & O'Barr, W.M. (1979). The social significance of speech in the courtroom. In H. Giles and R. St.Clair (Eds.). *Language and social psychology* . Baltimore: University Park Press.

Lutz, R. J., MacKenzie, S. B., & Belch, G. E. (1983). Attitude toward the ad as a mediator of advertising effectiveness: Determinants and consequences. In R. P. Bagozzi & A. M. Tybout (Eds.). *Advances in Consumer Research* (pp. 532-539). Ann Arbor, MI: Association for Consumer Research.

MacInnis, D.J. & Jaworski, B.J. (1989). Information processing from advertsiements: Toward an integrative framework. *Journal of Marketing, 53*, 1-23.

McCann,C.D. & Hancock, R.D. (1983). Self-monitoring in communicative interaction: Social cognitive consequences of goal-directed message modification. *Journal of Experimental Social Psychology, 19*, 109-121.

McCann, C.D., & Higgins, E.Y. (1988). Motivation and affect in interpersonal relations: The role of personal orientation and discrepancies. In H.E. Sypher & E.T. Higgins (Eds.). *Communication, social cognition and affect* (pp. 53-79). Hillsdale, NJ: Erlbaum.

McCann, C.D., & Higgins, E.T. (1990). Social cognition and communication. In H. Giles & W.P. Robinson (Eds.). *Handbook of language and social psychology* (pp. 13-32). New York: Wiley.

McCann, C.D., & Higgins, E.T. (1984). Individual differences in communication: Social cognitive determinants and consequences." In H.E. Sypher & J.L. Applegate (Eds.). *Understanding interpersonal communication: Social cognitive and strategic processes in children and adults* (pp. 172-210). Beverly Hills: Sage.

Mick, D. G. (1992). Levels of subjective comprehension in advertising processing and their relations to ad perceptions, attitudes, and memory. *Journal of Consumer Research, 18*, 411-424.

Page, R. A., & Balloun, J.L. (1978). The effect of voice volume on the perception of personality. *The Journal of Social Psychology, 105*, 65-72.

Peterson, R.A., Cannito, M. P., & Brown, S. P. (1995). An exploratory investigation of voice characteristics and selling effectiveness. *Journal of Personal Selling and Sales Management, 15*, 1-15.

Petty, R. E., Cacioppo, J. T., & Schumann, D. (1984). Attitude change and personal selling: Central and peripheral routes to persuasion. In J. Jacoby & S. C. Craig (Eds.). *Personal selling: Theory, research and practice.* Lexington, MA: Lexington Books.

Pittam, J., & Gallois, C. (1987). Predicting impressions of speakers from voice quality: Acoustic and perceptual measures. *Journal of Language and Social Psychology, 5*, 233-245.

Putman, W., & Street, R.L. (1984). The conception of perception of noncontent speech and performance: Implications for speech accommodation theory. *International Journal of the Sociology of Language, 46*, 97-114.

Scherer, K. R. (1986). Vocal affect expression: A review and a model for future research. *Psychological Bulletin, 99*, 143-165.

Snyder, M. (1974). The self-monitoring of expressive behavior. *Journal of Personality and Social Psychology 30*, 526-537.

BEST COPY AVAILABLE

Snyder, M. (1979). Self-monitoring processes. In L. Berkowitz (Ed.), *Advances in Experimental Social Psychology*, (pp. 86-128). New York: Academic Press.

Snyder, M. (1987). *Public appearances private realities.* New York: Freeman.

Snyder, M., Simpson, J.A., & Gangestad, S. (1986). Personality and sexual relations. *Journal of Personality and Social Psychology, 51,* 181-190.

Snyder, M., Berscheid, E., & Glick, P. (1985). Focusing on the exterior and the interior: Two investigations of the initiation of personal relationships. *Journal of Personality and Social Psychology, 48,* 1427-1439.

Snyder, M., Berscheid, E., & Matwychuk, A. (1988). Orientations toward personnel selection: Differential reliance on appearance and personality. *Journal of Personality and Social Psychology, 54,* 972-979.

Snyder, M., & DeBono, K.G. (1985). Appeals to image and claims about quality: Understanding the psychology of advertising. *Journal of Personality and Social Psychology, 49,* 586-597.

Snyder, M., & Simpson, J.A (1984). Self-monitoring and dating relationships. *Journal of Personality and Social Psychology, 47,* 1281-1291.

Street, R. L. (1990). The communicative functions of paralanguage and prosody. In H. Giles & W.P. Robinson (Eds). *Handbook of Language and Social Psychology* (pp. 121-140). New York: John Wiley.

Wilson, E. J., & Sherrell, D. L. (1993). Source effects in communication and persuasion research: A meta-analysis. *Journal of the Academy of Marketing Science, 21,* 101-112.

Zaichkowski, J.L. (1985). Measuring the involvement construct. *Journal of Consumer Research, 12,* 341-352.

Zuckerman, M., Larrance, D., Spiegel, N., & Klorman, R. (1981). Controlling nonverbal displays: Facial expressions and tone of voice. *Journal of Experimental Social Psychology, 17,* 506-524.

---

[*] The authors gratefully acknowledge the helpful comments and suggestions by Elizabeth J. Wilson (Louisiana State University), Jean Perrien (UQAM), as well as the research grant from the Social Sciences and Humanities Research Council of Canada. The speech signal representations are available upon request from the first author.

[1] Compliance implies that the source can control the choice behavior of the receivers because they seek a favorable reaction from the source, such as a reward. That does not necessarily apply to advertising communication.

[2] Internalization was measured by four bipolar scales: "trustworthy," "honest," "competent," and "believes in what he says."

[3] Identification was measured by four bipolar scales: "prestigious," "same culture as myself," "pleasant," and "attractive."

BEST COPY AVAILABLE

[4] They were composed of 168 and 163 words, respectively. The average word lengths were 4.7 and 4.8 letters, respectively. The average sentence lengths were 26.3 and 24.6 words, and the Gunning legibility indexes (Gunning, 1952) were 14.6 and 14.5. Furthermore, the two messages had the same syntactic construction and complexity, with 24 propositions for the high-involvement message and 23 for the low-involvement one. The two messages were different only at the lexical level, since the low-involvement message focused on ATM cards, whereas the high-involvement one focused on student loans.

[5] The only articles to report studies using factorial designs in phonetics are: Giles & Smith (1979) and Bourhis (1983).

AVAILABLE

How to Submit Papers to *NA*JP

The submission of good papers is very important to any psychology journal. We hope that you will support our views about what a psychology journal should be like by submitting papers now. We promise to mail a decision on your paper within 5 weeks of receipt by us. We promise to publish your paper in an average of 5 months of receipt of a final accepted version.

Submit 3 paper copies of each manuscript prepared according to APA guidelines. Also include a diskette with your manuscript or e-mail the file to NAJP@mpinet.net. If you send file by e-mail send 1 paper copy. Give us your e-mail address and a fax number where we can reach you if you do not send the manuscript by e-mail. Include 2 large stamped envelopes so we can send your manuscript out for review. We encourage you to have your paper read by peers before submission.

If the final paper is accepted, please send a check or purchase order for the amount specified with your final draft (billed at $25 dollars per typeset page in units of two pages).

Submission of a manuscript to the Journal is a contract to publish with the Journal if the paper is accepted. Because of our rapid editorial feedback, simultaneous submission to other journals is not allowed. We will offer brief comments on the suitability of a topic for publication in *NA*JP before a submission.

Send all correspondence to: *North American* Journal of Psychology, 240 Harbor Dr., Winter Garden, FL 34787, phone 407-877-8364.

SUBSCRIPTIONS

All subscriptions are on a calendar year basis only. If you order late in the year, the earlier issues will be sent to you. Institutional rate, $65. Individual rates, paid by check, $30. Add $7 for Canadian subscriptions. Add $8 for subscriptions outside North America. Phone orders accepted with Visa, MasterCard or American Express. Call 407-877-8364. The *North American* Journal of Psychology is published semi-annually in June & December.

Visa ☐ AMEX ☐ MC ☐

Card # Exp. Date

Name

Address

City State Zip

345A

A Summary of Our Philosophy

The *North American Journal of Psychology* publishes scientific papers that are of general interest to psychologists and other social scientists. Papers may encompass a wide variety of topics, methods, and strategies. It is our belief that many good scientific papers are rejected for invalid reasons. Some journals reject up to 90% of their submissions because they don't have space. Furthermore, studies of the review process strongly suggest that not all of the lucky 10% are better papers than those that get rejected. In our view, many of those rejected papers are meritorious with need for only minor revisions. Perhaps our philosophy can be summed up this way: We are looking for ways to strengthen good papers rather than searching for weak excuses to reject them.